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SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF ECONOMICS

THE FUNDAMENTALS OF ECONOMICS

Textbook
for self-study

Under the general editorship of DSc in Economics,
Professor M. Mashchenko

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Рецензенти: завідувач кафедри економіки та управління виробничим і комерційним бізнесом Українського державного університету залізничного транспорту, д-р екон. наук, професор *В. Л. Дикань*; професор кафедри економічної теорії Національного юридичного університету імені Ярослава Мудрого, д-р екон. наук, професор *О. С. Марченко*.

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The key theoretical statements of the fundamentals of economics have been covered; the main economic laws and mechanisms of the use of these laws in economic activity have been considered; the general theoretical principles of socioeconomic life of society and the current state of functioning and prospects of development of economic systems have been analyzed.

For independent work of students of the preparatory department.

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Contents

Introduction

The economic development of modern society causes a number of different problems regarding the functioning and reliability of economic phenomena and processes occurring in it. Defining the tasks of economic policy of the state, the formation of the main priorities and areas of development of all sectors of the economy contributes to the deep study and understanding of the objective economic laws, principles of production management and management methods.

Theoretical understanding of economic processes of the modern society can be possible only under the condition of cognition of the fundamental principles of functioning and development of national economies, their relationships and trends in the development of the general civilization process.

The academic discipline "The Fundamentals of Economics" helps to gain knowledge in the field of economic laws, phenomena and processes on macro and micro levels as well as explore their features, which is important in the system of economic education.

The goal of teaching the academic discipline is the formation of a system of theoretical knowledge about the terms and concepts of economic theory; mastering the essence of economic phenomena and processes; providing basic fundamental theoretical training necessary for further study of the cycle of economic disciplines; understanding of the laws and main trends of economic development of society.

The academic discipline is the foundation for the study of a set of economic disciplines consisting of Political Economy, Microeconomics, Macroeconomics, Modern Economic Theories, History of Economics and Economic Thought, Government Regulation of Economy.

The objective of the academic discipline is to clarify the nature and content of economic laws and determine the mechanism of the use of these laws by people in economic activity; to provide an insight into the general theoretical principles of socio-economic life of society; to analyze the basic features of economic systems and directions of their evolution; to identify the best achievements of the theory and management practices, methods and techniques of the effective use of limited resources; to explain the laws of social reproduction, economic growth; to research the features of the current state of functioning and prospects of development of the economic system.

The subject of the academic discipline is economic relations in their unity and relationship with limited productive forces, political, ideological and social institutions of society, as well as economic laws governing social production at all stages of its development.

The issues covered in the textbook are important for the future economist, as they provide an opportunity to master such professional competences as:

the ability to analyze the main economic categories and laws, the best achievements of the theory and practice of economic activity, the methods and techniques of the effective use of scarce resources of production;

the ability to do research on the peculiar features of the current state of functioning and perspectives of development of the economic system as well as develop effective solutions for improvement of production efficiency;

the ability to substantiate the economic decisions.

The textbook has a clear logical structure which contains a direct presentation of the main theoretical material of the topic that is accompanied by justification, explanations, which provides a deeper understanding and a high level of mastering the material.

The presentation of theoretical material on the topics ends with a glossary. It helps students determine the essence of the topic. Each topic has a list of questions for self-assessment, a set of carefully selected tests with answers and heuristic tasks. This allows students to be sure that they have mastered the material of the topic. There is a list of references at the end of each topic.

1. Economics in public life. Introduction

The purpose of studying the theme is to help students develop the following **competences:** the ability to show the origin of economic views and the formation of economic science, to analyze basic economic categories and laws, to use methods of economic research, to determine the connection of economic theory with economic practice, to understand the essence of positive and normative economics.

Questions to study

1.1. The origin of economic views and the formation of economic science. The methods of economic research. Economic theory.

1.2. The connection of economic theory with economic practice.

1.3. Microeconomics. Macroeconomics. Positive economics. Normative economics.

Keywords: economic theory, economic science, methods of economic research, economic laws, microeconomics, macroeconomics, positive economy, normative economy.

1.1. The origin of economic views and the formation of economic science. The methods of economic research. Economic theory

The economic doctrines that formed the basis of modern political economy are mercantilism (16 – 17th centuries), physiocracy (17 – 18th centuries), classical English political economy (18 – 19th centuries), economic romanticism, utopian socialism); Marxist political economy (19th century), historical school, marginalism (19 – 20th centuries), neoclassical school, Keynesian economics (19 – 20th century), institutionalism, neoliberal school (19 – 20th century).

The main schools of economic thought

Mercantilism is the main economic system used during the 16 – 18th centuries. The main goal was to increase a nation's wealth by imposing government regulation concerning all of the nation's commercial interests.

It was believed that national strength could be maximized by limiting imports and maximizing exports.

Physiocracy is an economic theory developed by a group of scientists of the 18th century. French economists believed that the wealth of nations was derived solely from agriculture and that agricultural products should be highly priced. Their theories originated in France and were most popular during the second half of the 18th century. Physiocracy was perhaps the first well-developed theory of economics.

Classical economics is widely regarded as the first modern school of economic thought. Classical economics refers to work done by a group of economists in the 18th and 19th centuries. They developed theories about the way markets and market economies work. The study was primarily concerned with the dynamics of economic growth. It stressed economic freedom and promoted ideas such as laissez-faire and free competition.

Marxist economics provides a quite different, more critical interpretation of capitalism. As disadvantages, it emphasises: property relations, the associated class structure and economic inequalities, and the relentless drive for capital accumulation. The main idea was that only by eliminating the control of the economy from private ownership will the economy continue to grow.

Institutional economics (the German historical school of the 19th century) focuses on the growth of big business, transnational corporations, the influence of trade unions, and the character of governmental economic activities in different nations.

Keynesian economics is a macroeconomic theory based on the ideas of the 20th century British economist John Maynard Keynes. Keynesian economics argues that private sector decisions sometimes lead to inefficient macroeconomic outcomes. It supports an active policy of the public sector.

Marginalism covers such topics as marginal utility, marginal rates of substitution, and opportunity costs, within the context of consumers making rational choices in a market with known prices. It studies economics using the marginal values.

Monetarism suggests freedom of entrepreneurship and laissez-faire. The basis of the development of society is considered to be monetary circulation. The theory operates when there is no crisis and everything is developing well.

Neoclassical economics. An approach to economics that relates supply and demand to an individual's rationality and his or her ability to maximize utility or profit. Neoclassical economics also increased the use of mathematical equations in the study of various aspects of the economy. This approach was developed in the late 19th century [7, p. 12–14].

Economics is the study of how individuals and societies choose to use the scarce resources that nature and previous generations have provided.

Economic theory is the study of decision making under conditions of scarcity. It also studies the economic relations in society in order to meet material and spiritual needs based on the rational use of resources. Economic theory is also defined as a social science that studies the economic laws of social development, production relations, the influence of productive forces and superstructures on production relations [2, p. 8].

Production relations are economic relations that arise between people in the process of production, distribution, exchange and consumption of goods. Production relations include organizational-and-economic and socioeconomic relations. While the organizational-and-economic relations arise due to the division and cooperation of labor, the basis of the socioeconomic relations is ownership of the means of production.

Further study of economic sciences is impossible without knowledge of the basic economic categories and laws such as:

the methodology, i.e. general approaches or guidelines;

the methods, i.e. specific details and/or procedures to accomplish a task;

the modeling method. A model is a simplified picture of reality, an abstract generalization of how the relevant data actually behave. Economic models are built with words, diagrams, and mathematical statements;

ceteris paribus = "other things being equal";

the method of induction, a method of reasoning that proceeds from facts to generalizations;

the method of deduction, i.e. reasoning from assumptions to conclusions by testing a hypothesis;

analysis – explanations of the behavior of economic decision-making units;

prediction – forecasting the effects of changes in some variables which depends upon information available, generality, consistency, realism;

economic law – a statement of interrelationships between economic factors that explains what may be caused or what may happen under certain circumstances.

Classification of economic laws

1. **General economic laws** are characteristic of all socioeconomic formations. This category includes:

the law of the correspondence of production relations to the nature and level of development of productive forces;

the law of the increasing productivity of social labor;

the law of economy of time.

2. **A special type of economic laws** is operative only in some rather than all socioeconomic formations – namely, where there is commodity production. This category includes:

the law of value;

the law of money circulation;

the law of supply and demand.

3. **Specific economic laws**, which make up a distinct category, operate only under a specific mode of production. Certain specific economic laws operate only in certain phases or stages of a given mode of production. For example, the system of economic laws of the socialist phase is gradually transformed into the system of economic laws of full communism.

1.2. The connection of economic theory with economic practice

Economic theory is one of the fundamental social sciences. Economic theory teaches the vital regularity that applies to all people. It teaches the laws which regulate the production, distribution, exchange and consumption of goods. They are defined as economic laws.

Economic resources are factors used in producing goods or providing services. In other words, they are the inputs that are used to create things or help you provide services. Economic resources can be divided into **human resources**, such as labor and management, and **nonhuman resources**, such as land, capital goods, financial resources, and technology.

There is a direct relationship between economic theory and economic practice. So, it is necessary to formulate the main principles of economics.

1. People face trade-offs.
2. The cost of something is what you give up to get it.
3. People respond to incentives.
4. Markets are usually a good way to organize economic activity.

5. Government can sometimes improve market outcomes.

6. A country's standard of living depends on its ability to produce goods and services.

Economic categories are logical concepts representing, in generalized form, economic conditions of society. Examples are: price, market, profit, cost, production.

Specific economic sciences (labor economics, finance, etc.) deal with the problems of practical use of economic theory in the practice of management. Thus, economic theory is the methodological basis, foundation of development of all other economic sciences. That is why the first function performed by economic theory is the methodological one [9, p. 16].

The second function is cognitive due to the fact that having studied this discipline, a person significantly expands the range of his/her knowledge about the patterns of development of society in which he/she lives.

The next function of economic theory is prognostic, which determines the identification of scientific forecasts of the country's development and the development of models for the development of society in the future.

The last function is practical. Economic theory performs this function contributing to the formation of the economic type of thinking, providing the necessary minimum of economic knowledge which is essential for every conscious person living in a democratic society. In addition, economic theory is closely linked with the development of economic policy of the state.

Economic policy is the actions taken by a government to influence its economy.

The types of economic policy actions can include setting interest rates, regulating the level of government expenditures, creating private property rights, and setting tax rates.

1.3. Microeconomics. Macroeconomics. Positive economics. Normative economics

Currently, the economic science is fundamental, it includes some components such as: political economy, microeconomics and macroeconomics.

Political economy is one of the fundamental social sciences. Political economy teaches the vital regularities that apply to all people. It teaches the laws which regulate the production, distribution, exchange and consumption of goods.

Both **microeconomics** and **macroeconomics** focus on the allocation of limited resources.

Microeconomics studies the behavior of individual households, business entities and firms in making decisions on the allocation of limited resources.

Macroeconomics is the study of the economy as a whole.

Microeconomics focuses on the actions of individual agents within the economy, like households, workers, and businesses.

Macroeconomics focuses on broad issues such as the growth of production, the number of unemployed people, the inflationary increase in prices, government deficits, and levels of exports and imports. Microeconomics and macroeconomics are not separate subjects, but rather complementary perspectives on the overall subject of the economy.

Macroeconomics is primarily concerned with two topics: long-run economic growth and short-run fluctuations in the output and employment that are often referred to as the business cycle. Economies show a distinct growth trend that leads to a higher output and higher standards of living in the long run, but in the short run there is a great deal of variability. Sometimes growth proceeds more rapidly and sometimes it proceeds more slowly [9, p. 18].

Macroeconomists often reflect on the microeconomic principles underlying macroeconomic analysis, or the microeconomic foundations of macroeconomics.

Macroeconomics deals with the economy as a whole; it examines the behavior of economic aggregates such as aggregate income, consumption, investment, and the overall level of prices. Aggregate behavior refers to the behavior of all households and firms together.

In these processes in human society there are certain relationships between people. We define them as economic.

Economics can be **normative** and **positive.**

Positive economics is defined as the "what is there" in the economy, while **normative economics** focuses on the "what ought to be".

Positive economics tells us how the economy works.

Normative economics inform us what should be. Here value judgments identify problems and prescribe solutions.

Glossary

Economics is the study of how individuals and societies choose to use the scarce resources that nature and previous generations have provided.

Economic theory is a social science that studies the economic laws of social development, production relations, the influence of productive forces and superstructures on production relations.

Production relations are economic relations that arise between people in the process of production, distribution, exchange and consumption of goods.

Economic law is the statement of interrelationships between economic factors that explains what may be caused or what may happen under certain circumstances.

Microeconomics studies the behavior of individual households, business entities and firms in making decisions on the allocation of limited resources.

Macroeconomics deals with the economy as a whole; it examines the behavior of economic aggregates such as aggregate income, consumption, investment, and the overall level of prices. Aggregate behavior refers to the behavior of all households and firms together.

Tasks for self-assessment

Questions for self-assessment

1. Give a definition of economic theory.
2. What theories have made a significant contribution to the development of the theoretical foundations of the economic science?
3. What is the subject of economic theory?
4. What are the positive and normative functions of economic theory?
5. What are the main tools of economic theory?
6. What are the specifics of macroeconomic problems?
7. What are the main methods of economic analysis?
8. What are the main problems of modern microeconomics?
9. What are the main economic methods?
10. List the main subjects of economic theory.

Tests

1. If the economy is studied as an integrated system, this analysis is:

a) microeconomic;

b) macroeconomic;

c) positive;

d) normative;

e) global;

f) all answers are correct.

2. Macroeconomics studies economies at the:

a) aggregate level;

b) international level;

c) national level;

d) all answers are correct;

e) all answers are incorrect.

3. The representatives of this theory believed that the wealth of nations was derived solely from agriculture and that agricultural products should be highly priced. This theory is called:

a) economic romanticism;

b) utopian socialism;

c) classical English political economy;

d) neoliberal direction;

e) all answers are correct;

f) all answers are incorrect.

4. This theory covered such topics as marginal utility, marginal rates of substitution, and opportunity costs, within the context of consumers making rational choices in a market with known prices:

a) economic romanticism;

b) marginalism;

c) classical English political economy;

d) neoliberal direction;

e) all answers are correct;

f) all answers are incorrect.

5. This theory suggested freedom of entrepreneurship and laissez-faire. The basis of the development of society is considered to be monetary circulation:

a) monetarism;

b) marginalism;

c) classical English political economy;

d) neoliberal direction;

e) all answers are correct;

f) all answers are incorrect.

6. This theory is the main economic system used during the period from the 16th to 18th centuries. The main goal was to increase a nation's wealth by imposing government regulation concerning all of the nation's commercial interests.

a) mercantilism;

b) utopian socialism;

c) classical English political economy;

d) neoliberal direction;

e) all answers are correct;

f) all answers are incorrect.

7. This theory was an approach to economics that relates supply and demand to an individual's rationality and his or her ability to maximize utility or profit:

a) neoclassical economics;

b) marginalism;

c) classical English political economy;

d) neoliberal direction;

e) all answers are correct;

f) all answers are incorrect.

8. The method of induction means:

a) a method of reasoning that proceeds from facts to generalizations;

b) reasoning from assumptions to conclusions by testing a hypothesis;

c) explanations of the behavior of economic decision-making units;

d) forecasting the effects of changes in some variables which depends upon information available, generality, consistency, realism;

e) all answers are incorrect.

9. The general methods of economic theory are:

a) the dialectical method;

b) the marginal analysis method;

c) the methods of induction and deduction;

d) the analysis method;

e) all answers are correct;

f) all answers are incorrect.

10. The method of prediction means:

a) a method of reasoning that proceeds from facts to generalizations;

b) reasoning from assumptions to conclusions by testing a hypothesis;

c) explanations of the behavior of economic decision-making units;

d) forecasting the effects of changes in some variables which depends upon information available, generality, consistency, realism;

e) all answers are incorrect.

Examples of problem solving

Task 1. Match the macroeconomic methods with their main characteristics.

Methods	Characteristics
1. Induction	a) deducing the principles from the facts;
2. Deduction	b) a method of cognition that divides the whole into components and examines them separately;
3. Analysis	c) a method of cognition that unites the individual parts into one;
4. Synthesis	d) a method of cognition based on the conclusions from general to partial

Example of doing Task 1

1d), 2a), 3b), 4c).

Task 2. Identify the relationship between economic theory and economic policy of the state. Explain your answer and confirm with examples from economic practice.

Example of doing Task 2

Economic theory is closely linked with the development of economic policy of the state.

Economic policy is the actions taken by a government to influence its economy.

The types of economic policy actions can include setting interest rates, regulating the level of government expenditures, creating private property rights, and setting tax rates.

There is tight interrelationship between economic theory and economic policy.

Some examples from economic practice of the USA. The federal government pursues policies that strive to create a healthy economy that benefits all Americans. This is a very difficult task. An economic policy that benefits one segment of society may be damaging to another. Keeping inflation under control by raising interest rates makes it difficult for businesses to get capital in order to expand and hire additional workers; the unemployment rate may go up. Low interest rates, on the other hand, can lead to inflation as spending increases; many workers find their pay raises meaningless because prices go up.

To maintain a strong economy, the federal government needs to seek to accomplish three main policy goals: stable prices, full employment, and economic growth. In addition to these three policy goals, the federal government has other objectives to maintain sound economic policy. These include low or stable interest rates, a balanced budget, and a trade balance with other countries.

Problems for independent solution

Task 1. Continue the sentences:

1. The science…
2. Social science that studies…
3. Economies produce...

Task 2. Are the following statements true (T) or false (F)?

When economic theory is suggested for studying, students should get such abilities as:

to explain the basic economic categories and laws;

to analyze economic indicators;

to analyze the primary data;

to draw conclusions and to prove them;

to solve analytical problems;

to calculate GDP;

create economic tasks.

Task 3. There is a law of increasing needs in economy which states that with the development of society its needs grow and expand, becoming diverse. Prove this law and give examples.

Task 4. Continue. (Add 3 – 4 points).

Why study economics?

1. To learn the way of thinking.
2. To understand society.
3. …………………
4. …………………
5. …………………

Task 5. Which of the following statements about scarcity is true? (Give an explanation).

A. Once a choice is made, the problem of scarcity is solved.
B. A good is scarce if not everyone has it.
C. Scarcity means unlimited human wants.
D. Both rich people and poor people face the problem of scarcity.

Essay topics

1. The connection of economic theory with other sciences.
2. The advantages and disadvantages of the main economic schools.
3. The main specifics of macroeconomic problems.

References: [1; 2; 7; 9 – 11; 13; 14].

2. The fundamental problems of the economy

The purpose of studying the theme is to help students develop the following **competences:** the ability to understand the fundamental problems of the economy, to justify the economic choice, to analyze and classify unlimited needs, to know the essence of the process of production of material goods and services, to calculate opportunity costs, to build a production possibility curve.

Questions to study

2.1. The economic needs of society. The unlimited needs. Economic interests: the essence, the subjects, the classification. The law of increasing needs.

2.2. Production of tangible goods and services. Economic resources: land, labor, capital, entrepreneurial ability.

2.3. The economic problem: scarcity and choice. The production possibilities curve.

Keywords: economic needs, unlimited needs, goods and services, economic resources, production possibilities curve, land, labor, capital, entrepreneurial ability.

2.1. The economic needs of society. The unlimited needs. Economic interests: the essence, the subjects, the classification. The law of increasing needs

In order to exist, people should constantly satisfy their needs. A **need** is a basic requirement that an individual wishes to satisfy.

People have **basic needs** for food, shelter, affection, esteem and self-development. Many of these needs result from human biology and the nature of social relationships. Customer needs are, therefore, very diverse and broad. A want is a specific manifestation of a need that personal and cultural factors determine. There are classifications of needs on various grounds.

According to the **degree of priority**, needs are divided into primary (food, clothing, footwear, furniture) and secondary (education, health care, tourism, etc.).

According to the **form,** needs are divided into material (clothing, shoes, housing), spiritual (books, music), social (respect, work).

On the **basis of saturation**, needs can be divided into those that can be satisfied (needs for food, durable goods) and those that cannot be fully satisfied (needs for tourism, sports, self-development).

From the point of view of the **subject**, there are individual needs (of an individual), collective (of groups of people, enterprises) and public (the needs of society as a whole for public goods – museums, parks, theaters).

According to the **type** needs are divided into personal (individual entities' needs for consumer goods) and production (the needs of enterprises for means of production).

Consumer goods are goods that are used by individuals to meet their personal needs (food, clothing, housing, consumer durables).

Means of production are sets of **means of labor** (machinery, equipment which is used for production of goods) and **objects of labor** (raw materials which are used for production of materials). Means of production are consumed by enterprises (firms) in the process of production of goods.

While customer needs are broad, customer **wants** are usually quite narrow.

Consumer **wants** are shaped by social and cultural forces, the media and marketing activities of businesses.

This leads to another important concept of **customer demand.**

Consumer demand is a want for a specific product supported by an ability and willingness to pay for it.

For example, many consumers around the globe want a Mercedes. But relatively few are able and willing to buy one.

Economic interests are the objective motives for people's activities, showing the place of these people in the system of social production.

Economic interest means a person's right to share in the income, gains, losses, deductions, credits, or similar items of the company, and to receive distributions from the company, but excluding any other rights of a member, including the right to vote or to participate in management.

The relations of production are revealed precisely through the incentives of human activity, that is, as interests, which are objective conditions of social existence. Economic interests are related to the consciousness of people.

Interests can be:

individual that is the interests of one person.

collective that is the interests of a group of people.

public that is the interests of the whole society.

Human needs are unlimited. They are constantly increasing.

The law of increasing needs says that with the development of society people's needs tend to grow and become more diverse.

Because the amount of economic resources are limited, there is a need to use them effectively. The process of making a choice is not always easy.

2.2. Production of tangible goods and services. Economic resources: land, labor, capital, entrepreneurial ability

Economic resources are factors used in production of goods or provision of services.

In other words, they are the inputs that are used to create things or help you provide services. **Economic resources** can be divided into **human resources**, such as labor and management, and **nonhuman resources**, such as land, capital, goods, financial resources, and technology.

Production happens when an individual, a business, or an organization makes a product, provides a service, or generates an idea or concept.

The main factors of production are:

- land;
- capital;
- labour;
- entrepreneurship;
- information.

Land is a natural resource. Its characteristics are: it is a gift of nature; it is limited in supply; land is immovable; the supply of land involves no opportunity cost.

Capital is:

- the money invested in business;
- man-made resources used for further production;

• intellectual property, the ideas or the talent of a business' workforce; it is an intangible form of capital.

Labour is human mental and physical effort used in production of goods and services.

Entrepreneurship is the act of creating a business or businesses while building and scaling it to generate a profit. An entrepreneur is a person who sets up a business aiming to make a profit. Entrepreneurial ability contains the following characteristics: taking risks with equity; the ability to combine factors of production, make decisions and be responsible for them, always be creative.

Information. To produce goods and services in a competitive global market, businesses require more information about the following:

- new technology;
- customers;
- competition;
- political conditions;
- sources of supply.

Factors of production are also termed **resources or scarce resources.** There are three main types of resources in economy (Fig. 2.1).

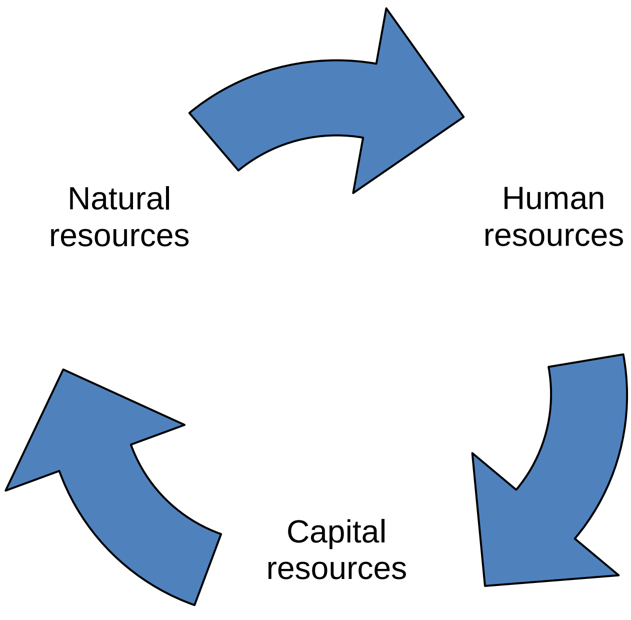

Fig. 2.1. **Three types of resources working together in an economy**

Natural resources are things we get from nature. Natural resources are natural assets (raw materials) occurring in nature that can be used for economic production or consumption.

A human resource is one person within a company's overall work-force, with each person lending their skills and talents to the organization to help it succeed. Any person willing to trade their labor, knowledge, or time for compensation in an effort to improve the organization is a human resource. It doesn't matter if they are part-time, full-time, freelance, or contract employees.

Employees must be hired, satisfied, motivated, developed, and retained. A human resources department is the department that manages company's human resources. Humans need more management than other resources and a different approach, so that is why it is useful to have an entire department devoted to them. Whether it is mediating interpersonal conflicts or setting up a retirement plan, the human resources department is trained to handle it.

Capital resources are machines, tools and buildings needed to do a job. Capital resources can be any asset, tool, piece of equipment, or housing facility that is used by a business over an extended period of time.

In contrast, **raw materials** are substances or materials used in the primary phase of a production process. They are often bought in bulk and shaped specifically to the individual company's needs. Raw materials, also called commodities, include wood, metals like iron, or natural resources such as oil.

Resources must have a few key qualities to be considered a capital resource. They must:

be a component in the manufacturing process and necessary for the process to produce a product;

be used over an extended period of time. This time frame will vary according to the life expectancy of the resource, but may not only be used once;

be man-made.

The tools and machines used in the manufacturing process are great examples of capital resources. These items, regardless of what kind of item they are used to make, meet all three qualities: they are man-made, essential to the manufacturing process, and can be used again and again over a long period of time.

2.3. The economic problem: scarcity and choice. The production possibilities curve

Every society has some system or process that transforms its scarce resources into useful goods and services.

In doing so, it must decide:

What gets produced?

How is it produced?

and *To whom is it distributed?* The primary resources that must be allocated are land, labor, and capital.

• **Scarce resources are**: land / natural resources, labour, capital, entrepreneurship.

Scarcity forces us to make choices. We can't have everything we want, so we are forced to choose what we want most.

• **Choices.** *Goods and services* are the objects that people value and produce to satisfy wants.

The production possibilities curve (PPC) measures the maximum output of two goods using a fixed amount of input. Input is any combination of the four *factors of production*: *natural resources* (including land), *labor*, *capital goods*, and *entrepreneurship*. Manufacturing of most goods requires a mix of all four. Each point on the curve shows how much of each good will be produced when resources shift from making more of one good and less of the other.

This model describes the scarcity problem and shows maximum quantities of two goods that can be effectively produced within a country (or a firm).

The production possibilities curve shows that at any given time, a country cannot produce more of one good without producing less of something else. So we can express this by a model based on the relationship between the amounts produced of the two goods (Fig. 2.2).

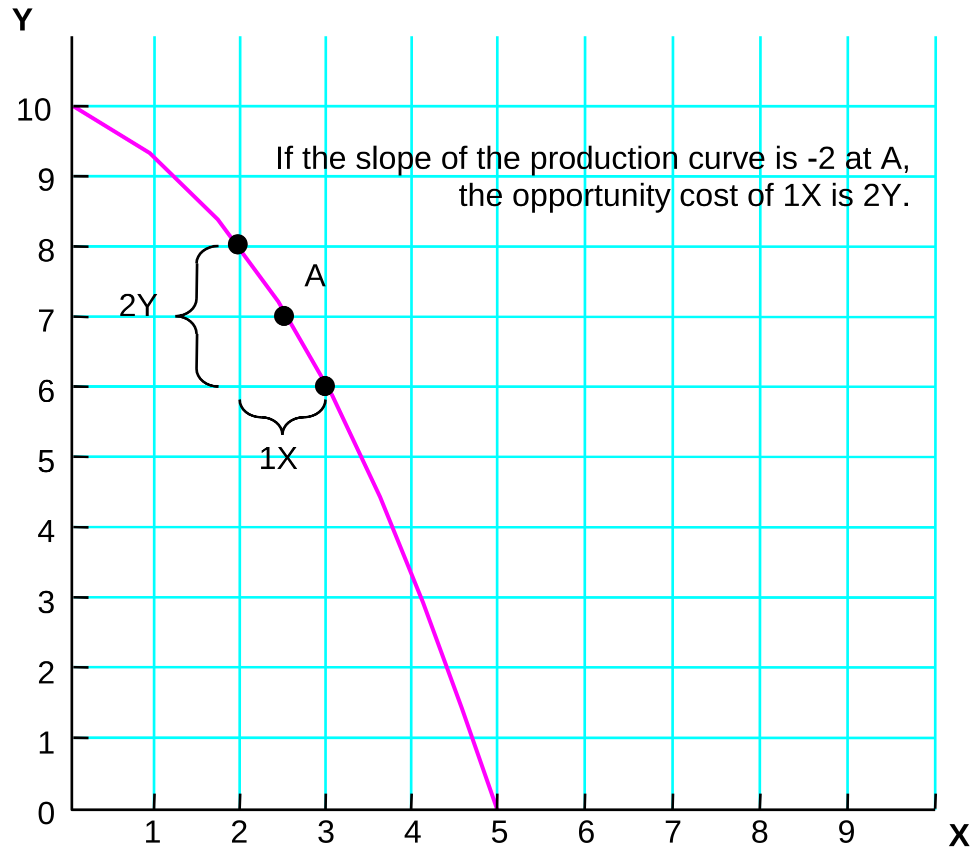

Fig. 2.2. **The production possibilities curve**

The PPC illustrates the concept of **the opportunity cost** (Fig. 2.3).

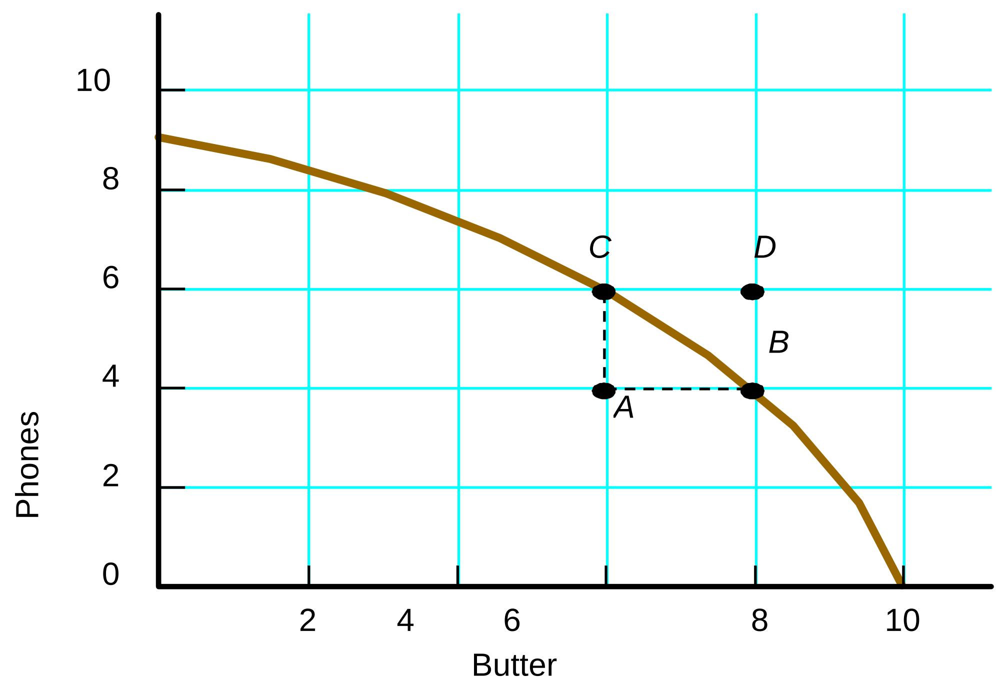

Fig. 2.3. **The concept of the opportunity cost as illustrated by the PPC**

The opportunity cost of any good or service is the value of all the other goods or services that we must give up in order to produce it.

A key point here is the trade-off between gadgets and food. Whenever we increase the output of gadgets we must decrease the output of food. This is the cost: it is the "opportunity cost" of the increase in production of gadgets.

Point D is unattainable, given available technology, resources and labor force. Point A is inefficient. Points C and B are efficient.

Because of limited resources, a person is always faced with the problem of choice. But choosing one option of using limited resources the person must give up other alternatives to use it. Opportunity cost is the best option to use a limited resource which had to be given up.

Opportunity cost is what you have to give up when you make an economic choice.

Example: I chose the popcorn, so I have to give up the pretzel. That is my opportunity cost.

Glossary

A need is a basic requirement that an individual wishes to satisfy.

Economic interests are the objective motives for people's activities, showing the place of these people in the system of social production.

Means of production are sets of **means of labor** (machinery, equipment which is used for the process of production of goods) and **objects of labor** (raw materials which are used for the process of production of materials).

Natural resources are natural assets (raw materials) occurring in nature that can be used for economic production or consumption.

A human resource is one person within a company's overall workforce, with each person lending their skills and talents to the organization to help it succeed.

Capital resources are machines, tools and buildings needed to do a job.

The production possibilities curve (PPC) shows that at any given time, a country cannot produce more of one good without producing less of something else.

Opportunity cost is what you have to give up when you make an economic choice.

Tasks for self-assessment

Questions for self-assessment

1. Give a definition of the means of production.
2. What natural resources do you know?
3. What does the production possibilities curve (PPC) illustrate?
4. List the main capital resources.
5. What is the difference between needs and wants?
6. What are the specifics of economic interests?
7. What are the main principles of building a PPC?
8. What are the main problems of modern economy?
9. What is the opportunity cost?
10. List the main factors of production.

Tests

1. People have basic needs for:
a) food;
b) shelter;
c) affection;
d) esteem;
e) self-development;
f) all answers are correct.
2. A need is:
a) a basic requirement that an individual wishes to satisfy;
b) an opportunity cost;
c) the development of society;
d) all answers are correct;
e) all answers are incorrect.
3. According to the degree of priority, needs are divided into:
a) food, clothing, footwear, furniture;
b) food, clothing, footwear;
c) primary and secondary;
d) education, health care;
e) all answers are correct;
f) all answers are incorrect.

4. Primary needs include:

a) clothing, footwear;

b) food, clothing, footwear;

c) water, furniture;

d) dwelling;

e) all answers are correct;

f) all answers are incorrect.

5. Secondary needs include:

a) clothing, footwear;

b) food, clothing, footwear;

c) water, furniture;

d) dwelling;

e) all answers are correct;

f) all answers are incorrect.

6. In terms of satisfaction, needs can be divided into:

a) needs for food and durable goods;

b) needs for food and dwelling;

c) satisfiable and unsatisfiable;

d) needs for tourism and sports;

e) all answers are correct;

f) all answers are incorrect.

7. Consumer goods are:

a) food, clothing;

b) clothing, housing;

c) consumer durables;

d) food and drinks;

e) all answers are correct;

f) all answers are incorrect.

8. Consumer demand is:

a) a want for a specific product supported by an ability and willingness to pay for it;

b) goods that are used by individuals to meet their personal needs;

c) sets of means of labor;

d) means of production consumed by enterprises (firms) in the process of production of goods;

e) all answers are correct;

f) all answers are incorrect.

9. Economic interests are:

a) the objective motives for people's activities, showing the place of these people in the system of social production;

b) wants for a specific product supported by an ability and willingness to pay for it;

c) the media and marketing activities of businesses shaped by social and cultural forces;

d) goods that are used by individuals to meet their personal needs;

e) all answers are correct;

f) all answers are incorrect.

10. The production possibilities curve (PPC) shows:

a) that at any given time, a country cannot produce more of one good without producing less of something else;

b) what you have to give up when you make an economic choice;

c) a company's overall workforce, with each person lending their skills and talents to the organization to help it succeed;

d) all answers are correct;

e) all answers are incorrect.

Examples of problem solving

Task 1. The table describes the production of tanks and cars in a company with a given quantity of productive resources.

1. Build a production possibilities curve of the enterprise.

2. Based on the data given in the table and graphical models answer the following questions:

a) What would the opportunity cost of a tank be, expressed in cars, with transition from option C to option D?

b) Is there a possible combination of 4 tanks and 650 cars, according to the production possibility curve? Why do you think so?

c) Based on the same table, is there a possible combination of 3 tanks and 350 cars? Explain your answer.

Table

Production of tanks and cars depending on the productive resources

Options	A	B	C	D	E	F
Tanks	0	1	2	3	4	5
Cars	1 000	950	850	650	350	0

Example of doing Task 1

2a. When moving from option C to option D the opportunity cost of a tank, expressed in cars is equal to 200 (850 – 650), so in order to increase (3 – 2) the production of tanks by one the enterprise needs to use as many resources as are used for production of 200 cars.

2b. The combination of 4 tanks and 650 cars is impossible (P, Fig. 2.4), because resources are limited, and the point P lies outside the curve. The enterprise lacks resources to provide this level of production.

2c. The combination of 3 tanks and 350 cars is possible, but the point M lies inside the curve. It means that this choice does not correspond to the criteria of efficiency and rationality (inefficient).

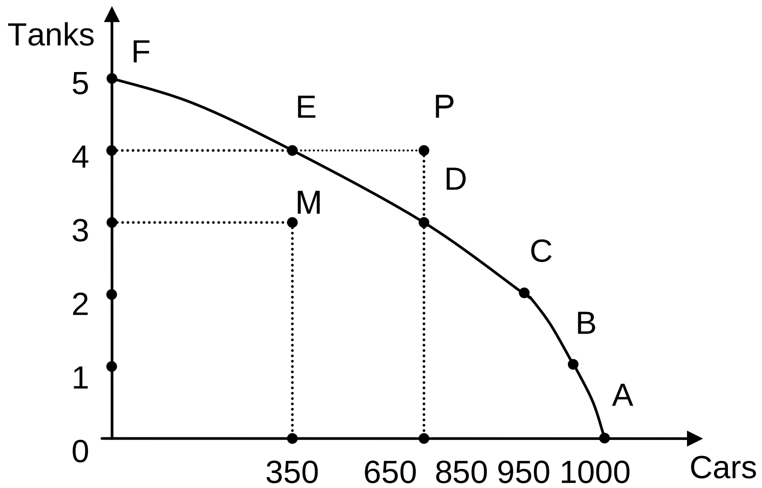

Fig. 2.4. **The production possibility curve of the enterprise**

Task 2. Explain the shifts in the production possibility curve when society can produce more output.

Example of doing Task 2

Society can produce more output if:

the technology has been improved (innovation);

more resources have been discovered;

expansion of the capital stock has been done;

economic institutions have become better at fulfilling people's wants;

an improvement in the rules (laws, institutions, and policies) of the economy has been made;

resources have been increased;

larger labor force has been engaged;

labor force participation has changed.

Problems for independent solution

Task 1. Continue the sentences:

1. In order to get more of something…

2. Economic interests are…

3. Every society has some system or process that transforms its scarce resources into useful goods and services. In doing so, it must decide:…

Task 2. Are the following statements true (T) or false (F)?

1. A need is a basic requirement that an individual wishes to satisfy.

2. Economic interests are sets of means of labor.

3. Means of production are the objective motives for people's activities, showing the place of these people in the system of social production.

4. Natural resources are natural assets (raw materials) occurring in nature that can be used for economic production or consumption.

5. The production possibilities curve (PPC) shows that at any given time, a country cannot produce more of one good without producing less of something else.

Task 3. Continue (add 3 – 4 points):

Scarce resources include:

1. Land/natural resources.

2. …………………

3. …………………

4. …………………

Task 4. Which of the options of production presented in Fig. 2.5 are effective and which are ineffective? (Give an explanation.)

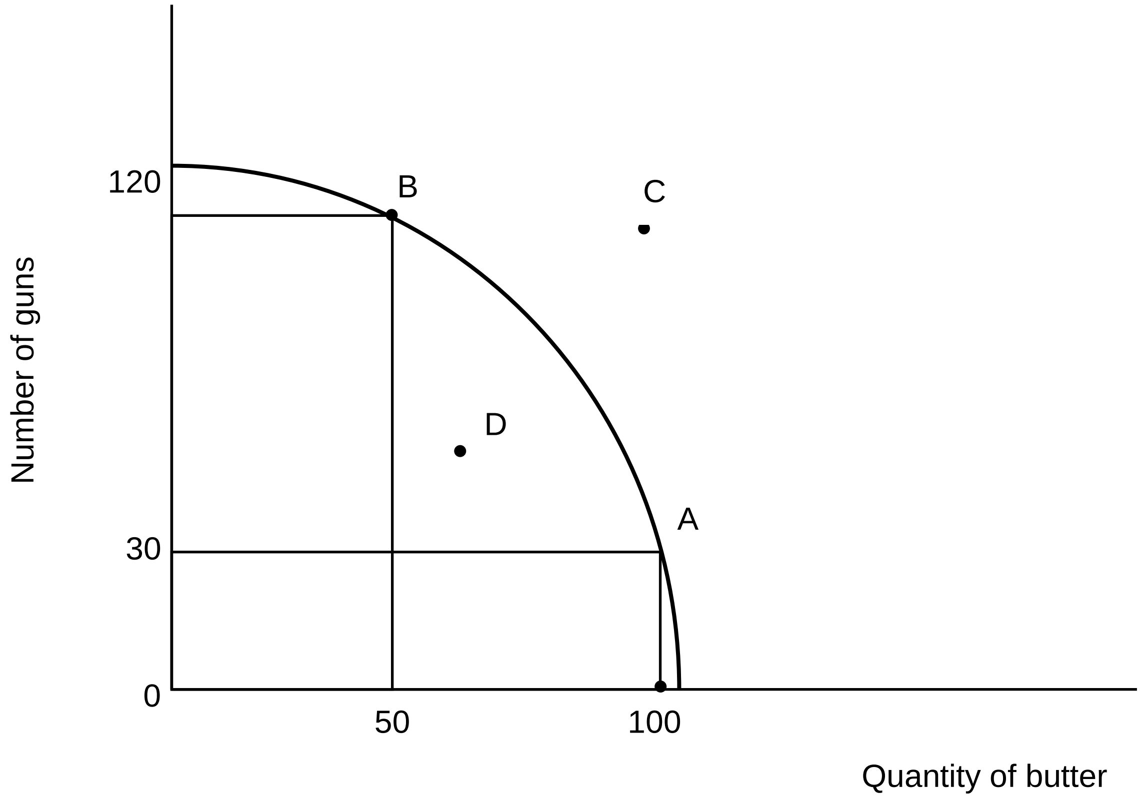

Fig. 2.5. **The options of production**

Essay topics

1. Maslow's hierarchy of needs.
2. The concept of the opportunity cost.
3. The main problems of modern economy.

References: [1; 2; 7; 9 – 11; 13; 14].

3. The main types of economic systems

The purpose of studying the theme is to form the following students' **competences:** the ability to determine the essence of the economic system of society, to provide a general description of the internal driving forces of its development, to characterize the types of economic systems.

Questions to study

3.1. The economic system: the essence and structure.

3.2. Classification of economic systems.

Keywords: economic system, productive forces, economic mechanism, market economic system, command economy, traditional economic system, mixed economy.

3.1. The economic system: the essence and structure

In the process of economic activity, economic relations between people always function as a certain system that includes the objects and subjects of these relations, various forms of relations between them.

The economic system is a set of interdependent and in some way ordered elements of the economy that create the economic structure of society. Outside the systemic nature of the economy, economic relations and institutions could not be reproduced (constantly restored), economic laws could not exist, theoretical understanding of economic phenomena and processes could not be formed, and there could be no coordinated and effective economic policy.

The economic system is an extremely complex category that has a branched structure, a system of laws of its functioning and development. This is not a simple set of different elements, but their hierarchical construction, where there are basic system-forming elements that determine the nature of economic systems, a combination of general economic and specific laws.

The source of the development of economic systems, the transition of one economic system to a higher one are contradictions, the depth and severity of which determine whether the system can be improved by reforms and move to a higher level of development, as we see in the evolution of the capitalist economic system which has become so obsolete that only revolutionary methods, i.e. elimination of this system, replacement by a new one will ensure socioeconomic progress, as we see in the case with Ukraine when it comes to the transition from administrative command system to a market economy.

Any economic system faces the problem of infinite needs of society and limited resources. Therefore, every economic system is original. Any economic system solves three most important questions: what, how and who to produce for?

Any economic system is characterized by hierarchy, seeks to acquire a state of integrity and organicity. The hierarchy of the system is determined by the place of its elements in the social structure and the mechanism of their subordination. The type of interconnection of system elements can be **vertical** or **horizontal**. Vertical dependence manifests itself in relations of coercion by the authorities. Horizontal connections are facilitative, voluntary, and competitive.

The economic system is characterized by different spheres of functioning, levels of management of its subjects. The modern economic system consists of four levels: global economic, macroeconomic, mesoeconomic, microeconomic. Development, interaction and complementarity of economic levels are the key to stability, dynamism and efficiency of the system.

The economic system includes:

• productive forces;

• a system of economic relations;

• the mechanism of management.

The basis of the economic system is **the social division of labour**. This is determined by the fact that specialization of enterprises in the production of individual products and especially their elements (components, parts) creates stable economic ties, transforms the economy into a single whole.

Modern productive forces, based on a developed social division of labour, are a complex structure of interconnected industries.

Productive forces are a certain system of factors of production, which ensures the transformation of natural resources in accordance with the needs of people, creates tangible and intangible goods, promotes productivity of social labour.

Social division of labour does not only mean distribution of the means of production but also of the labour power. Meeting the various needs of society requires different and quantified masses of social labour applied in different areas and sectors of the economy, i.e. the distribution of social labour in appropriate proportions. Thus, social organization of labour is not a chaotic movement of labour, but its distribution and functioning in strict accordance with the needs of society. The proportionality of social production is an objective necessity for its successful development.

The interaction of productive forces and production relations finds expression in the dialectic of socialization and separation, which determines the organizational-and-economic and socioeconomic structure of the economic system. The development of productive forces, the improvement of machinery and technology intensify the processes of concentration of production, the growth of its socialization. **Socialization of production** is an objectively determined form of movement of the mode of production, the dialectical unity of general economic and specific historical, material and socioeconomic content.

The system of economic relations consists of organizational-and-economic, technical-and-economic and socioeconomic relations. All these relationships arise in the production process for various reasons. Technical and economic relations arise in connection with creation and use of objects of labour in the production process. Organizational and economic relations arise in connection with the methodology and techniques of production management. The most important are socioeconomic relations which are property relations determining the method of combining the workers with the means of production.

The mechanism of management is a set of forms and methods of regulation of economic relations which is based on the use of economic laws of the market, legal norms and means of state regulation.

Thus, the economic system of society can be considered as an orderly system of economic activity of people aimed at the production, distribution, exchange and consumption of goods and services, as well as the regulation of these activities in accordance with the goals of society.

There are several classifications of economic systems.

For example, W. Rostow classifies economic systems according to the degree of development of productive forces, i.e. depending on the level of development of means of production and people. **A traditional society** with a low level of development of means of production, primitive technology and illiteracy was the simplest one. **Transitional society** is more developed. Cooperation, manufactory is typical of it. *The stage of shift* characterizes the society of the 18 – 19th centuries with its industrial revolution and transition to the domination of large-scale machine production. *The stage of maturity* is a society of the end of the 19th century – the third quarter of the 20th century, where the achievements of the scientific and technological revolution were widely used, the cultural, qualification, professional level of workers rose. At the end of the 20th century, in industrialized countries, a society of mass consumption, characterized by a high level of development of productive forces and the transition of society's focus on meeting the needs of all its members, was built.

There is also a **formational approach** to the classification of economic systems, which is done and substantiated in the works of Karl Marx. This approach had long dominated the domestic political economy. According to K. Marx, the basis of the division of society into economic systems is a formative feature, according to which economic systems differ both in *the level of development of productive forces* and in the nature of the prevailing production relations.

The first economic system, K. Marx singled out, was *the primitive communal system*, where there was an extremely low level of development of productive forces, dominated by public (communal) ownership of the means of production. *Slave owning society* is characterized by a higher level of development of the means of production and productive forces. Production relations were based on the private ownership of the means of production. Slaves were the main means of production at that time.

Under *the feudal system* there was serfdom of the peasants dependent on the landlords and feudal lords, but the productive forces had a higher level of development. The nature of the production relations of *the capitalist system* is explained by the emergence of a system of wage labour in the development of productive forces. Capitalism goes through two stages of development – monopolistic (mid-18th – late 19th centuries) and monopolistic (imperialism) (late 19th – early 20th centuries). *The communist stage* is characterized by highly developed productive forces and the domination of public ownership of the means of production; it has two stages – socialism and full communism.

At present, **the civilization approach** to the classification of economic systems continues to develop in the domestic economic science. This approach determines the natural stages of development of the economic system in a completely different way. The humanistic orientation of human civilization comes to the fore. The ultimate goal of production is to meet human needs. The development of productive forces and technological mode of production is a systematizing element of the civilization method.

In the second half of the twentieth century, a scientific and technological revolution started. It determined the transition of productive forces to a new technological mode of production. Science, knowledge and information are now becoming the main sources of economic prosperity and open new opportunities for economic efficiency. The economy has entered the post-industrial era. According to the civilization approach, the following types of economic systems are distinguished: agrarian *(traditional)*, where agriculture and subsistence production are dominant; *industrial*, where industry and commodity production are dominant; *post-industrial*, in which the basis is production of intangible goods, information and knowledge.

In the modern economic literature, the most common classification of economic systems is based on two grounds: **the form of ownership** and **the method of regulation of economic activity**. According to this classification, there are traditional, market, administrative command and mixed economic systems.

3.2. Classification of economic systems

The traditional economic system is inherent in the early stages of society, pre-industrial era, when agrarian handicrafts prevailed, people largely depended on natural factors.

The features typical of it are: a low level of development of applied equipment, a widespread use of manual labour, illiteracy of the population, underdeveloped infrastructure, the simplest forms of organization of labour and production, poverty of the population, great dependence on foreign capital.

It is also characterized by low rates of economic development and its diversity. The greatest role belongs to the small-scale way of life represented by small producers (artisans and peasants). Knowledge, which has not yet become a science, was based on empirical observations, superficial generalizations.

Gradually the experience of farming had been accumulated. It was enshrined in customs and traditions. The great role of religion was typical of this stage. That is, the socioeconomic processes were significantly influenced by centuries-old traditions and customs, religious values, caste and social division of the population. In modern conditions, countries with traditional economies suffer from the dominance of foreign capital and overly active redistribution of national income by the state.

The administrative command (command, centrally managed) economic system is characterized by a monopoly of state property whose manager is the state apparatus, the absence of free commodity-money relations, a single political and economic centre concentrating in its hands all levers of impact on economic activity of enterprises, a significant part of additional product.

Under the administrative command system the economic power in society is concentrated in the hands of one entity (state, party, individual). All economic decisions are made by the centre in the form of plan-based orders, and the role of workers is reduced to the passive execution of these orders. The state decides what to do and interferes in business. At the same time, the responsibility from above is not personal, which causes irresponsibility, and that from below leads up to complete indifference to the results of their work.

The command economy is also called the planned system of management, because in the conditions of its domination the basic questions of the economy – what, how much, when to produce – are solved centrally through the system of directive planning. At the same time there is no competition between manufacturers. Prices for goods and services in society are also set centrally. Essentially low prices are set for basic necessities (food, medicine, utilities and children's goods) to make these goods available to everyone. And for the so-called luxury items (gold, crystal, cars) prices are artificially raised to ensure a balance of prices in society as a whole.

But, despite the negative features of the administrative command system, it has some advantages over, for example, a market economy. Among them the main ones are:

1. National economic resources are used most comprehensively.
2. There is social equality and social security.
3. There is general employment, i.e. all people have jobs.
4. There is a provision of all segments of the population with basic necessities.
5. Large-scale farming is carried out.
6. There are no losses from competition.

World experience of economic development shows that the most effective form of organization of economic life of society is **a market economy**.

A. Smith was the first economist to substantiate the role of a market economy in his study of the nature and causes of the wealth of nations, where he showed the nature and incentives of the free market. A. Smith wrote about the "invisible hand", i.e. competition that combines the interests of all entrepreneurs into a single interest.

Every independent owner pursues his private interest through the purchase and sale of goods, but the producer is forced to produce only those goods which society needs. In a market system, production is self-organizing and no one commands it.

In a market economy, there is dominance of private ownership of the means of production, the personal will of citizens and the will of entrepreneurship; regulation of the economy is carried out through the mechanism of competition; market prices are set under the influence of supply and demand; the economy under such conditions develops spontaneously; there is almost no state intervention in the main economic processes; there is practically no social protection of citizens.

The purpose of production is to make a profit. The market system is characterized by consumer dominance over the producer. With the existing independence of the producer, who in private ownership decides what, how, for whom, when to do. In fact, the manufacturer makes the product and in the amount that consumers want to buy.

Along with the positive features of the market economic system its negative features should also be mentioned. They are the following:

1. Unemployment.
2. Crises of overproduction as a result of spontaneous economic development.
3. Lack of state social protection of citizens.
4. Differentiation of society into rich and poor.
5. Lack of environmental protection, etc.

It should be noted that nowadays none of these economic systems exists in its pure form. The world is dominated by **a mixed economic system**, characterized by an organic combination of state and market mechanisms for regulation of economic activity. Under these conditions, public and private forms of ownership coexist. In today's world, a mixed economy enables countries to cooperate fruitfully, which encourages the development of productive forces and production relations.

A mixed economic system is an adequate form of functioning of modern developed countries.

The purpose of this combination is to maintain the benefits of market self-regulation of the economy while avoiding its negative effects. This sets certain limits on the scale and forms of state intervention in economic processes. Public authorities cannot use such methods as fixing prices, determining the volume of production and the size of profits, because it will inevitably lead to the shutdown of the market mechanism. Mostly, the state uses indirect methods that change the behaviour of autonomous entities by linking their private interests with national priorities.

In a mixed economic system, there is a variety of forms of ownership of the means of production; planning is indicative, i. e. recommended; the economy is dominated by monopolies, oligopolies, and multinational corporations. The state, in turn, regulates the prices set by business entities. Also, there is a system of social protection; promotion of competition is carried out through the adoption of antitrust law; within reasonable limits, there is support for customs and religion.

It should be noted that mixed economies of different countries are completely different from each other. Each country has its own model of a mixed economic system. Among the main ones there are the following:

1. **US free market model.** It is characterized by minor government intervention in the economy and encouragement of private initiative.

2. **Socially-oriented market of Western Europe**, of which typical is significant state intervention in economic processes, social protection of citizens and development of private entrepreneurship.

3. **State-controlled market of Japan and other East Asian countries.** In this model there is a close interaction between the state and business; social security problems are solved at the firm level.

In any mixed economy, the economic mechanism also undergoes significant changes. Planned management methods are further developed within individual firms in the form of a marketing management system. At the same time, at the macro level, the development of planning methods is associated with state regulation of the economy.

Planning acts as a means of active adaptation to market demands. As a result, the key tasks of economic development receive a new solution.

Thus, the question of the volume and structure of products is weighed on the basis of marketing research within firms, as well as the analysis of priority areas of STP, the forecast of social needs at the macro level. The market forecast allows companies to reduce in advance release of obsolete goods and to pass to qualitatively new models and kinds of production. The marketing system of production management makes it possible to bring the individual costs of companies producing the bulk of goods of this type, in line with socially necessary costs, even before the start of production.

State sectoral and national programs (plans) also affect the volume and structure of goods and services produced, ensuring their greater compliance with changing societal needs.

The problem of resource use is solved within large companies on the basis of strategic planning taking into account the most promising industries. At the same time, the redistribution of resources for the development of new industries is possible due to budget allocations, state national and interstate programs, R&D in the priority areas of STP.

Correct and scientifically substantiated identification of the patterns of functioning of the economic system has always been and will be important. In Ukraine, currently experiencing hardship, the problem of highlighting the essence of economic development is gaining additional urgency, because for a long time it has not been possible to embark on the path of sustainable economic growth.

Glossary

The economic system of society is a set of subsystems, inter-connected elements acting as a whole.

The traditional system is characterized by a low level of technical development, mainly manual labor used, illiteracy of the population, high dependence on foreign capital, a great role of customs, traditions, religion, low rates of development, diversity of the economy.

The market economic system is characterized by the dominance of private ownership of the means of production, personal freedom of citizens, economic regulation through the mechanism of competition, market prices under the influence of supply and demand, spontaneous economic development, and lack of social protection.

The administrative command system is the domination of public ownership of the means of production, the planned system of management, no competition between producers, prices for goods and services in society set centrally.

Mixed economic system combines the best features of each of the economic systems.

Ownership is a system of relations between people concerning the possession, disposal, use and appropriation of goods.

A joint-stock enterprise is the only enterprise whose capital is formed by issuing shares.

Privatization is reduction of state intervention in the economy by: a) reducing the share of state property through the privatization mechanism; b) reducing the role of the state in the economy as a business entity. Privatization can be carried out by lease with subsequent redemption.

Tasks for self-assessment

Questions for self-assessment

1. What is the source of economic systems?
2. Why are there various problems in any economic system?
3. Name the main criteria for classification of economic systems.
4. What types of interconnection of elements of the economic system can there be?
5. Name the positive and negative features of the administrative command system.
6. Why is a market economy the most efficient one in the modern world?
7. Does a market economy have negative features? If so, which ones?
8. What type of economic system is there in Ukraine?

Tests

1. Ownership as an economic category is:

a) a person's attitude to the thing as his own one;

b) relations between people about the appropriation of means and results of production;

c) a thing that belongs to a certain person;

d) all answers are correct.

2. (A) legal entity(ies) is/are:

a) a person as a holder of property and non-property rights;

b) several states or all states of the planet;

c) organizations, enterprises, institutions;

d) local governments.

3. The subjects of property include:

a) goods and services;

b) individuals and legal entities;

c) the state and enterprises;

d) answers b) and c) together.

4. Appropriation is:

a) the process of obtaining property income;

b) a specific social way of taking hold of a thing;

c) deprivation of the subject of the right to possession, use and disposal;

d) economic use of property rights.

5. Leasing a land plot, its owner receives rent on the basis of the relationship of:

a) possession;

b) orders;

c) usage;

d) options a) and b) together.

6. Securities that are debt obligations of the enterprise that issued them are:

a) shares;

b) certificates;

c) promissory notes;

d) bonds.

7. What type of securities has a fixed level of dividends:

a) bonds;

b) obligations of the state treasury;

c) common shares;

d) preferred shares?

8. The income that the share brings to its owner is called:

a) wages;

b) rent;

c) interest;

d) dividend.

9. The share price is:

a) the process of quotation of shares on the stock exchange;

b) the price at which the shares are sold on the stock exchange;

c) the amount that is indicated on shares;

d) the price of one share compared to another.

10. Privatization is:

a) the process of transition from private to state ownership;

b) the process of transition from private to any non-state form;

c) the process of transition from a private to any other form;

d) there is no correct answer.

11. Privatization funds do not include:

a) rent;

b) redemption of enterprises by labour collectives;

c) sale at an auction;

d) corporatization of enterprises.

Examples of problem solving

Task 1. 1,000 shares were sold at the market value. The nominal value of one share is 10 UAH, the dividend is 15 %. The bank interest rate is 10 % per annum. Calculate the share price, its market value and proceeds from the sale of all shares.

Example of doing Task 1

1) Calculate the share price by the formula:

$$\text{Share price} = \frac{\text{Dividend}}{\text{Bank interest rate}} \cdot 100\,\%. \tag{1.1}$$

Substituting the data into formula (1.1), we obtain:

$$\text{Share price} = \frac{15\,\%}{10\,\%} \cdot 100\,\% = 150\,\%.$$

2) Calculate the market value of one share by the formula:

$$\text{Market value of the share} = \\ = \frac{\text{Nominal value of the share} \cdot \text{share price}}{100\ \%}. \qquad (1.2)$$

$$\text{Market value of the share} = \frac{10\ \text{UAH} \cdot 150\ \%}{100\ \%} = 15\ \text{UAH}.$$

3) Calculate the income from the share sale:

$$\text{Income from the share sale} = \text{Quantity of shares} - \\ - \text{Market value of the share}. \qquad (1.3)$$

Income from the share sale = 1,000 shares × 15 UAH = 15,000 UAH.

Task 2. Calculate the price of the share and bond if the nominal value of the bond is 240 UAH, the dividend per share is 10 UAH, the interest on the bond is 16 %. The bank interest rate is 14 %.

Example of doing Task 2

1) Calculate the share price by the formula:

$$\text{Share price} = \frac{\text{Dividend}}{\text{Bank interest rate}} \cdot 100\ \%. \qquad (2.1)$$

Substituting the data into formula (2.1), we obtain:

$$\text{Share price} = \frac{10\ \text{UAH}}{14\ \%} \cdot 100\ \% = 71.43\ \text{UAH}.$$

2) Calculate the bond price by the formula:

$$\text{Bond price} = \frac{\text{Nominal value of the bond} \cdot \text{Interest on bonds}}{\text{Bank interest rate}}. \qquad (2.2)$$

$$\text{Bond price} = \frac{240\ \text{UAH} \cdot 16\ \%}{14\ \%} = 249.29\ \text{UAH}.$$

Problems for independent solution

Task 1. Calculate the share price if the dividend is 26 % and the bank interest rate is 18 % per annum. What is the difference between common and preferred shares?

Task 2. Calculate the share price of the market value if the nominal value of one share is 1,000 UAH, the dividend is 26 %, the bank interest is 18 % per annum.

Task 3. The nominal value of one share is 500 UAH, the dividend is 20 %. The bank interest is equal to 10 % per annum. Calculate the share price, its market value, total income and earnings of 5,000 shares at the market price.

Task 4. Real capital invested in production is 270,000 UAH, annual profit is 15,000 UAH. The bank interest rate is 5 %. 1,500 shares were issued. Calculate the share price. What other types of securities do you know?

Task 5. Annual profit is 15,000 UAH. All profits go to dividends. The bank interest rate is 12 %. 2,000 shares were issued. Actually invested capital is 150,000 UAH. Determine the amount of the founders' profit if all the shares are sold. What other types of securities do you know?

Essay topics

1. Positive and negative features of the administrative command system.

2. The relationship and efficiency of ownership in the market economy of Ukraine.

3. Comparative characteristics of mixed economies of different countries.

References: [1; 2; 7 – 11; 13; 14].

4. Market. Demand and supply in the market

The purpose of studying the theme is to develop the following students' **competences:** the ability to analyze the effects of market economy principles, to analyze the circular flow of resources, goods, income in the market economy, to use the advantages and minimize the drawbacks of the market economy, to build supply and demand schedules, their change under the influence of non-price determinants, to analyze market of goods, natural resources, labor, capital.

Questions to study

4.1. Market economy.
4.2. The basic subjects of the market economy.
4.3. Supply and demand.
4.4. Market equilibrium.
4.5. Classification of markets.

Keywords: market, market economy, private property, freedom of choice, personal interest, competition, free price setting, subjects of the market economy, households, firms, a circular flow model, demand, the law of demand, supply, the law of supply, equilibrium price, equilibrium volume.

4.1. Market economy

The market is a result of a natural and historical process of development in commodity production, which is stipulated by social labor distribution and personification of managing subjects.

Scientists state that the market history has existed for over six thousand years. The market borders have been enlarged as a result of increase in labor efficiency and development of commodity and money relations. Not only ready-made products have been involved in exchange, but also products which are not the result of production, such as land, timber, etc. At the same time at each stage of social development, the exchange became more civilized, acquiring certain specific features that were stipulated by the nature of the dominating economic system and a total of all factors which determine life activity of each people.

The notion "market" should be differentiated in a *narrow* and *wide sense.*

In a narrow sense it is sale of produced goods in the sphere of circulation.

In a wider sense it is interaction of the circulation sphere with other spheres of reproduction, i.e. production, distribution and consumption.

That is why **the market** can be characterized by the following inter-connected spheres:

1) as a sphere of exchange that is organized by the laws of commodity production and circulation, a total of commodity-money relations;

2) as a total of socioeconomic relations in the sphere of exchange, which help to distribute products and finally admit the social character of labour;

3) as a sphere of economy where economic benefits can be bought and sold, that determines their distribution and consumption in the process of uninterrupted reproduction;

4) as a sphere of circulation, a form of movement of a total public product, a type of household relations, an individual sub-system in the economic system, a form of economy organization and functioning.

The essence of the market is revealed through its **basic features** [12]: informative, intermediary, price forming, regulating, stimulating, sanitary (health-improving), social.

The informative function provides the necessary information for the market participants about correlation between supply and demand for goods and services, their quality, assortment, price fluctuation.

The intermediary function manifests itself in establishing relations between producers and consumers, providing realization of their economic interests.

The price forming function means setting the price for goods and services according to changes in the market environment, labour costs that are socially necessary for producing goods.

The regulating function provides conformity between the output of production and consumption, balance between supply and demand in all market parameters, movement of capital from one field into another.

The stimulating function means that prices help to stimulate achievements of scientific and technological progress in production, decrease in costs, increase in quality of goods, renewal of its assortment.

The sanitary (health-improving) function implies the release of society from economically weak unsustainable enterprises that promotes development of efficient economic entities.

The social function realises differentiation of the market participants according to the results of their activity, some firms get higher incomes, others go bankrupt and collapse.

Any market functions and develops due to its peculiar **mechanism**, that is the way of subjects' interaction concerning allocation of resources, implementation of new technologies, determining the production output and distribution of the produced goods.

The modern **market economy** is an economy of the mixed type that combines flexibility of the market mechanism, purposefulness of corporate regulation and orientation of state impact on the economy.

The principles of the market economy are private property, freedom of choice (for entrepreneurs, for owners of resources, for consumers), personal interest, competition, free price setting.

Private property means the right of individuals to buy, control, apply and distribute resources and produced benefits at their discretion.

Freedom of choice for entrepreneurs means that private enterprises have the right to purchase economic resources, organize production of goods and services by their choice, realize them at the markets according to the choice of the firm itself. Moreover, there are no artificial restrictions that would prevent entrepreneurs from entering or leaving a certain field.

Freedom of choice for owners of resources means that owners of material, labour resources and money capital can use them at their discretion. For example, they can start their own business, offer lease or loan setting their own price. Owners of the labour force can choose the most attractive type of labour for them, as well as an enterprise or institution where they should work.

Freedom of choice for consumers assumes that within their profits they can get any goods and services to satisfy their needs. In the market economy it is the consumer who has the largest freedom of choice. By spending their money, a consumer outlines what exactly entrepreneurs should produce, that in its turn defines the supply and demand. That is why the sovereignty of the consumer is often emphasised in the market economy.

Personal interest reveals in the fact that by making their choice market subjects are governed by their own profit. An entrepreneur tries to get the maximum profit by minimizing expenditures. Owners of resources try to sell them in the most expensive way. Consumers wish to obtain the necessary goods and services at the lowest price. Namely the attempts to get the maximum personal profit provide the market economy with directions for development and order.

Competition is rivalry among the market subjects for the best and most profitable conditions for purchase and sale of goods. It is an integral element of the market mechanism, a source of its functioning and development. There are three basic types of competition:

• among sellers, all of whom try to lower costs of production, increase labour efficiency, enlarge production, improve quality and assortment of goods to acquire certain advantages in comparison with their rivals;

• among buyers who try to get the necessary products at the lowest and most profitable price;

• between buyers and sellers, with the former trying to sell their products more expensive, and the latter seeking to buy them cheaper.

Free price setting presupposes that the price system is the main mechanism that coordinates the market economy. Entrepreneurs can set any prices for their goods. By trying to increase sales and maximise profit they should pay attention to demand, competitors' behaviour, quality of the products offered. Prices fluctuate under the influence of supply and demand and serve as orientation, when entrepreneurs, owners of resources and consumers realize their choice.

Advantages of the market economy are as follows:

the market promotes effective distribution of resources and their optimal usage in production (the market directs resources to production of those benefits which are necessary for the society);

the market favours a more efficient combination of resources, implementation of new technologies;

the market provides subjects with the real economic freedom without any compulsion; creates constant stimuli to increase the efficiency of production (maximum profit at minimal expenses);

the market encourages producers to satisfy various needs and to increase the quality of goods.

The drawbacks of the market economy are as follows:

the market does not contribute to preservation of non-renewable resources (timber, sub-soil, water);

the market does not create mechanisms to protect the environment;

the market is not concerned with production of social goods (roads, transport, defence);

the market does not guarantee the right to labour and profit;

the market does not develop medicine, education, culture;

the market does not eliminate stratification of the society into extremely rich and poor layers.

4.2. The basic subjects of the market economy

The basic subjects of the market are households, firms and the state [3].

A household is an economic unity made up of one or several entities that provides production and reproduction of the human capital; takes decisions on its own; is an owner of a certain factor of production and can lease out or sell its property, capital, labour force; strives for maximum satisfaction of its needs.

A firm is an economic entity which uses factors of production for manufacturing products for sale, strives for maximization of profit, takes decisions individually.

A state is presented by government institutions which realize legal and political power in order to provide control over certain economic entities and the market for reaching social goals.

A state presents demand for economic resources in order to realize economic activity in the state sector of economy; presents demand for means of production in order to manufacture social and other types of benefits; offers money and presents demand for money; offers social benefits without direct payment for them that streamlines efficiency of the production sector and reduces expenditures for household consumption; carries out state regulation of the market economy.

Market subjects enter into economic relations concerning ownership, usage, purchase and sale of market objects.

So, the modern market economy is a complicated entity that consists of various manufacturing, commercial and informational structures which interact together on the basis of the ramified system of legal norms, and which are united by a universal notion of the market.

The modern views on the state role in the market economy are based on the recognition that it is expedient to combine market stimuli of the economic development and the state active role, while regulating social and economic processes.

The economic functions of the state are the main ways the state impacts the economy, whose sum total reveals the essence of its economic role.

The state performs the following **exclusive functions:**

1. Creating the legal bases for the functioning of the economy.

2. Overcoming market failures – a certain limitation of the regulatory role of the market, which causes situations where the market mechanism for coordinating the behavior of economic subjects does not maximize public utility (monopoly, information imperfection, cyclical form of the recovery process).

3. Production of goods of public consumption (national defense, public administration, law enforcement, national communications system, unified energy system, basic science). Public goods are not focused on market demand, so satisfaction of this demand is a function of the state, which finances production of these goods from the state budget.

4. Overcoming external positive and negative effects, i.e. environmental and man-made disasters that require significant funds and administrative measures.

5. Implementation of social programs (fight against poverty, functions of social security and social protection).

6. Ensuring socio-political stability and state sovereignty.

7. Representation in international organizations.

The state regulation of economy takes place according to the **economic policy of the state,** that is a system of practical measures carried out by the state, government in the sphere of management of economy concerning the directions that economic process acquires in accordance with the aim, tasks and interests of the country, for short, medium and long periods of time.

The circular flow model is an economic model that shows the flow of money through the economy. The most common form of this model shows the circular flow of income between the household sector and the business sector with the product market and the resource market between them (Fig. 4.1).

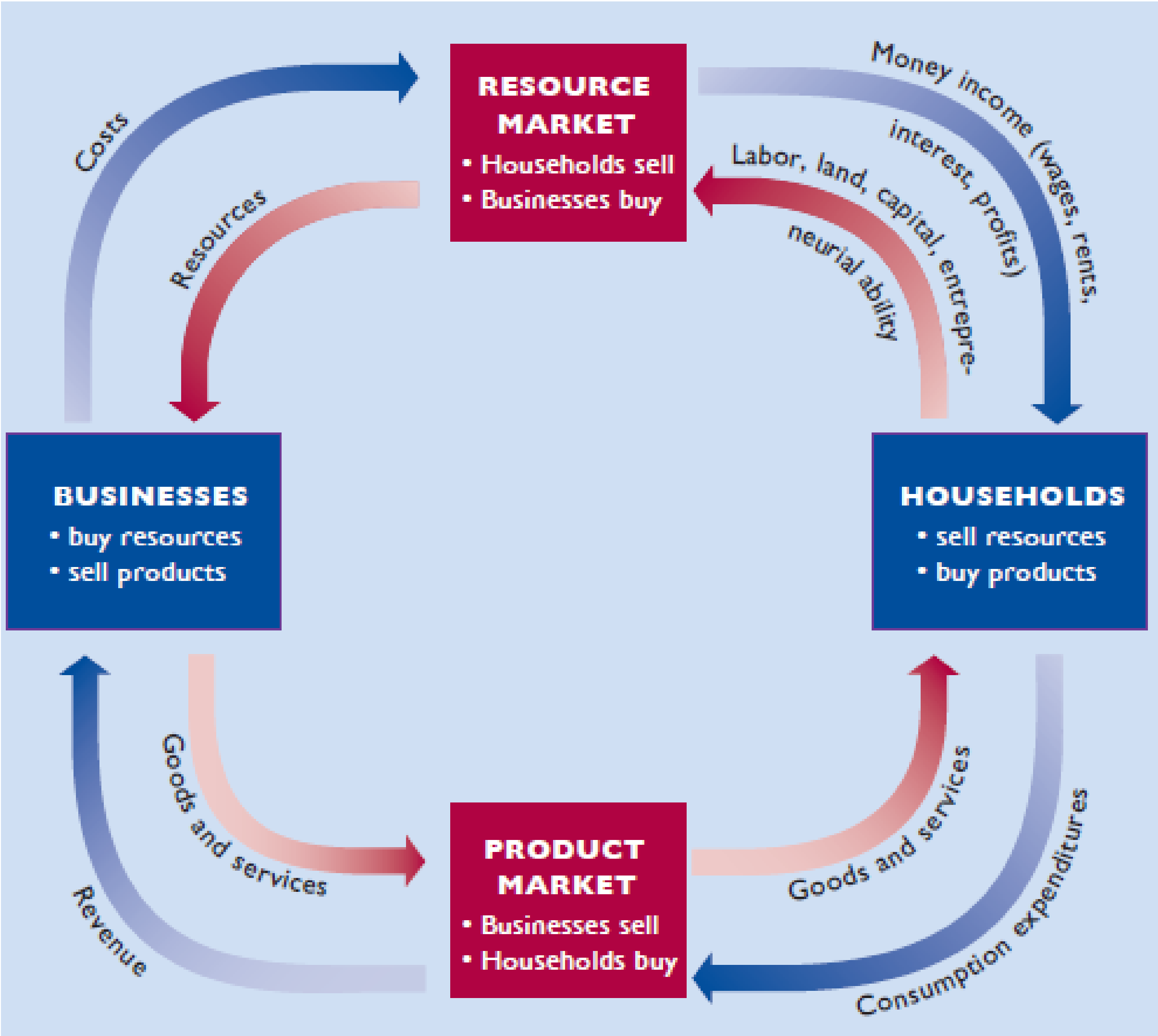

Fig. 4.1. **The circular flow model** [20]

Resources flow from households to businesses through the resource market, and products flow from businesses to households through the product market. These real flows are opposite to monetary flows. Households receive income from businesses (their costs) through the resource market, and businesses receive revenue from households (their expenditures) through the product market.

In economics, there are four types of resources, known as factors of production: *labor* (workers); *land* (land that is rented or purchased, as well as other components like natural resources and raw materials); *capital* (money used to buy the tools that labor applies to convert land – natural resources – into goods); *entrepreneurs* (people who put the other three resources together to create a successful business).

4.3. Supply and demand

The main elements of the market are supply and demand. Demand (D) is the number of goods and services that consumers want and can buy in the market for a definite price.

The law of demand describes the inverse relationship between price and volume of demand: the higher the price, the smaller the number of goods purchased, and vice versa. But there are goods that do not obey the law of demand – Giffen goods and Veblen goods.

Giffen goods include vital goods and cheaper goods that play a major role in overall human consumption.

Veblen goods are goods that show the social status of their owners, such as antiques, exclusive cars, watches and so on. Price is the most important factor influencing demand. Functional dependence between demand and price can be expressed by the following equation:

$$Q_D = f(P), \tag{4.1}$$

where P is the price;

Q_D is the quantity of demand.

The relationship between price and quantity of purchased goods can also be represented graphically in the form of a curve (Fig. 4.2).

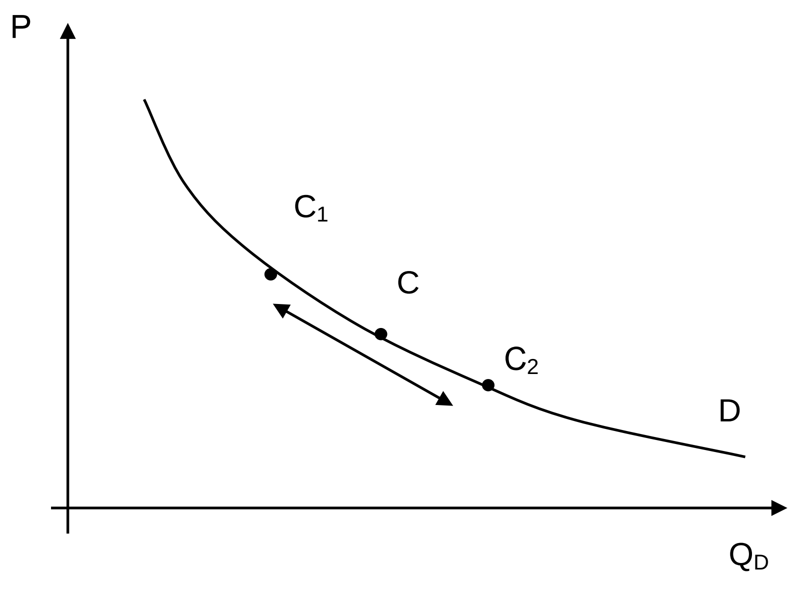

Fig. 4.2. **The demand curve**

The graph shows that a change in the price of a good causes a point to move along the demand curve.

But, in addition to the price, the quantity of demand is also influenced by so-called price factors (determinants). The non-price determinants of demand include the following:

• cash income of consumers;

• the number of consumers in the market;

• seasonality, fashion and tastes of consumers;

• consumer expectations regarding future prices and incomes;

• prices for interchangeable goods (substitutes) and complementary goods (compliments).

It should be noted that the action of all non-price factors leads to the movement of the demand curve in the coordinate system (Fig. 4.3).

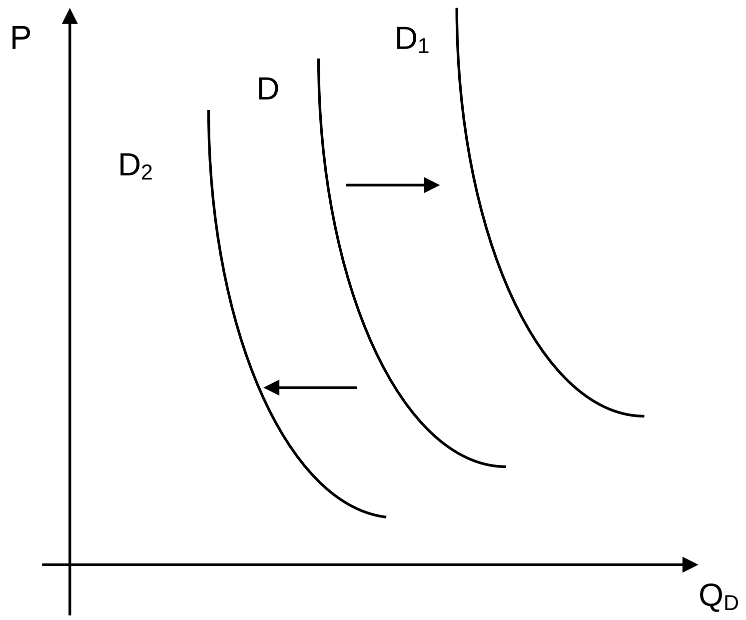

Fig. 4.3. **A shift of the demand curve due to the influence of non-price factors**

The shift of the curve D to position D_1 means that non-price determinants caused an increase in demand, while its shift to position D_2 means a decrease.

The degree of sensibility of the quantity of demand to changes in the price factor is called the elasticity of demand.

Supply is the number of goods and services that can be delivered to the market for sale at a certain price over a period of time.

The law of supply describes a direct relationship between price and supply: the higher the price, the more goods the suppliers want to deliver to the market and, conversely, the lower the price, the smaller the supply.

Therefore, price is also an important factor for supply. The functional relationship between supply and price is as follows:

$$Q_S = f(P), \tag{4.2}$$

where P is the price;

Q_S is the quantity of supply.

Graphically, the relationship between price and supply can be represented as a supply curve (Fig. 4.4).

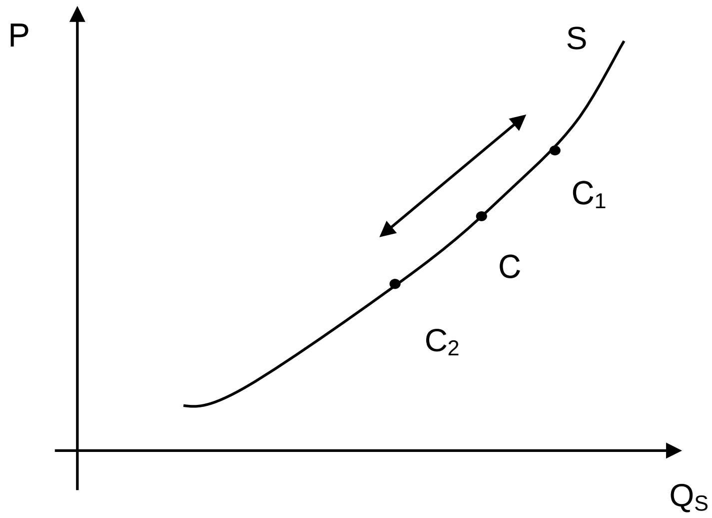

Fig. 4.4. **The supply curve**

The graph indicates that the change in the price of the product leads to the movement of a point along the supply curve.

But price is an important and common factor influencing supply.

The main non-price factors of supply are the following:

• prices for resources from which goods are made;

• technologies and organization of production;

• taxes and subsidies;

• the number of producers/suppliers in the market;

• expectations of producers/suppliers.

Non-price supply factors lead to a shift of the supply curve (Fig. 4.5).

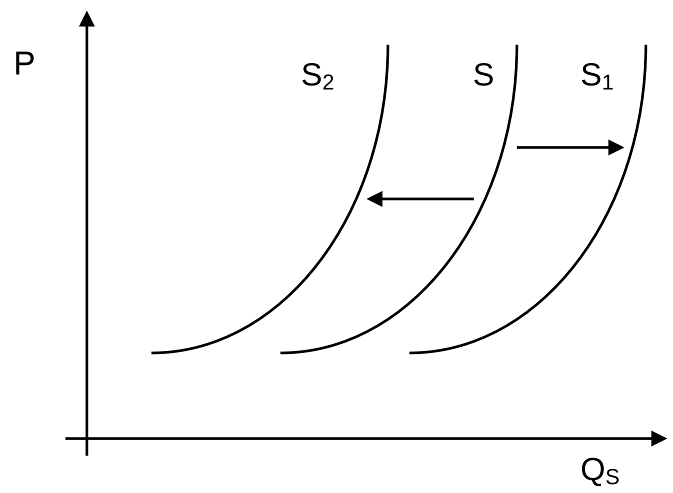

Fig. 4.5. **A shift of the supply curve due to the influence of non-price factors**

Shifting of the curve S to the right to S_1 means an increase in supply, while a shift to the left to S_2 means a decrease in supply.

The degree of sensibility of the quantity of supply to changes in one or another factor is called the elasticity of supply.

4.4. Market equilibrium

Demand and supply cannot exist separately, they constantly interact. The point of intersection of the demand curve and the supply curve is called the equilibrium point, where $\mathbf{P_0}$ is the equilibrium price and $\mathbf{Q_0}$ is the equilibrium volume (Fig. 4.6).

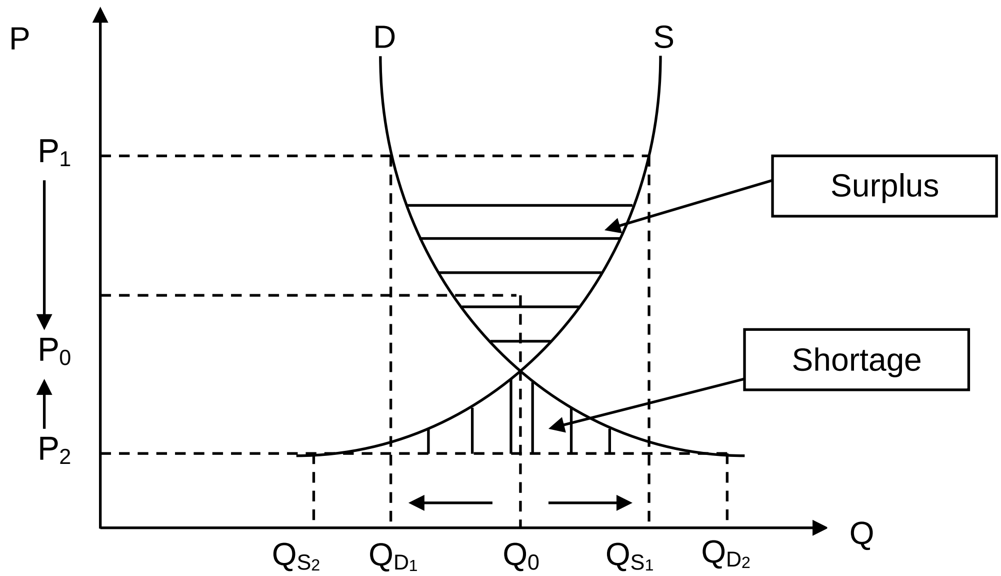

Fig. 4.6. **Market equilibrium**

Equilibrium price is a price that satisfies producers/suppliers and buyers/consumers. Equilibrium volume is the amount of goods that producers agree to supply to the market, and consumers are able to buy.

Graphic representation of market equilibrium gives grounds for the following conclusions:

• if the price is set higher than equilibrium, then, according to the law of demand, the value of demand decreases, and according to the law of supply, the value of supply increases, i.e. the market situation arises when $Q_D < Q_S$, which means a surplus of goods;

• if the price is set below equilibrium, then, according to the law of demand, consumers want to buy more goods, and producers, according to the law of supply, will begin to reduce production, so the market is in a situation where $Q_D > Q_S$, i.e. shortage of goods.

4.5. Classification of markets

It is impossible to know the market without analyzing its structure, i.e. its elements. In the modern economic literature, the main criteria for dividing the market into elements are presented as shown in Fig. 4.7.

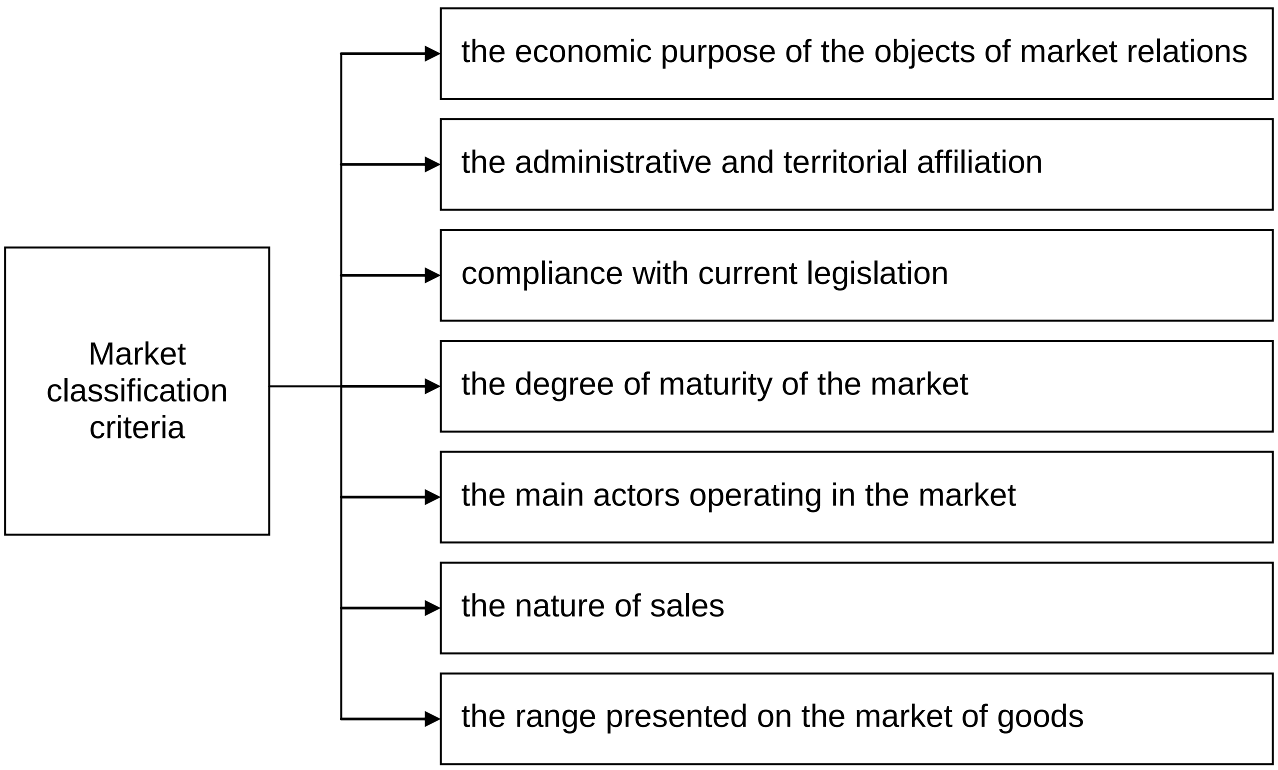

Fig. 4.7. **The criteria for dividing the market into elements**

Most often, the market is divided into elements according to the economic purpose of the objects of market relations. According to this criterion, the following markets are distinguished:

- consumer goods market;
- market of production resources;
- financial market (foreign exchange market, credit market and securities market);
- market of research and development projects and information.

One of the most important components of the market is the consumer goods market aiming to meet the various personal needs of people. The object of this market is consumer goods which are divided into two major groups: goods and services.

The market of productive resources is a market where the objects of market relations are: land, labour and means of production. The peculiarity of this market is that the demand for a particular production resource depends on consumer demand for the final product which is produced with its help.

The financial market is a market where such subjects of market relations as money, credits, and securities are functioning.

Currently the market of research and development projects and information plays a special role. Scientific and technical products, technical means of information, information systems are sold on this market.

The following markets are distinguished on an administrative and territorial basis:

- local;
- national;
- world.

According to current legislation, there are legal and illegal markets.

According to the degree of maturity of market relations markets are divided into:

- developed markets;
- emerging markets;
- markets with varying degrees of restriction of competition.

According to the main market players there are:

- buyers' markets;
- sellers' markets;
- markets of government agencies;
- markets of intermediaries.

Depending on the nature of sales the following types of markets are distinguished:

• wholesale markets;
• retail markets;
• markets of public procurement of agricultural products.

According to the range of goods on the market there are:

• closed markets;
• saturated markets;
• markets of wide range;
• mixed markets.

Glossary

The modern market economy is an economy of the mixed type that combines flexibility of the market mechanism, purposefulness of corporate regulation and orientation of state impact on the economy.

Competition is rivalry among the market subjects for the best and most profitable conditions for purchase and sale of goods.

A household is an economic unity made up of one or several entities that provides production and reproduction of the human capital, takes decisions on its own, is an owner of a certain factor of production and can lease out or sell its property, capital, labour force, strives for maximum satisfaction of its needs.

Equilibrium price is a price that satisfies producers/suppliers and buyers/consumers.

Equilibrium volume is the amount of goods that producers agree to supply to the market, and consumers are able to buy.

Tasks for self-assessment

Questions for self-assessment

1. Give definitions of the concepts "market", "market mechanism", "market economy".
2. What are the main functions of the market?
3. Specify the principles of the market economy.

4. What are the main subjects of the market economy, their characteristics and functions?

5. Describe the circular flow of resources, goods, income in the market economy.

6. What is the essence of the law of demand? Name the factors that affect demand.

7. What is the essence of the law of supply? Name the factors that affect supply.

8. What are the criteria for classification of markets?

9. What are the features of the market of production resources?

10. What facilities operate in the financial market?

Tests

1. The market is:

a) a place where people exchange goods;

b) a form of economic relations that operates on the principles of fair distribution of income;

c) the scope of interaction of supply and demand;

d) a set of agreements of purchase and sale of goods.

2. The functions of the market are:

a) regulating;	d stimulating;	g) social;
b) intermediary;	e) informative;	h) health-improving;
c) price forming;	f) sanitary;	i) all mentioned.

3. The market mechanism is:

a) the ratio of supply and demand in the market;

b) the ability of market forces (demand, supply, competition, etc.) to synchronize the decision to buy and sell;

c) a mechanism for coordinating the activities of subjects through a price system;

d) the mechanism of free pricing.

4. Which of the following does not belong to the principles of the market economy:

a) free price setting;

b) partnership relations;

c) state regulation of market relations;

d) centralized distribution of material and financial resources?

5. A household as a subject of a market economy is:

a) an economic entity which uses factors of production to manufacture products for sale, strives for maximization of profit, takes decisions individually;

b) a government institution which realizes legal and political power in order to provide control over certain economic entities and the market for reaching social goals;

c) an economic unity made up of one or several entities that provides production and reproduction of the human capital, takes decisions on its own, is an owner of a certain factor of production and can lease out or sell its property, capital, labour force, strives for maximum satisfaction of its needs;

d) there is no correct answer.

6. The law of demand provides that:

a) the excess of supply over demand will cause a decrease in price;

b) if consumers' incomes increase, they usually buy more goods;

c) the demand curve usually has a positive slope;

d) when the price of goods decreases, the volume of purchases increases.

7. Improvement of technology shifts:

a) the demand curve up and to the right;

b) the demand curve down and to the right;

c) the supply curve down and to the right;

d) the supply curve up and to the left.

8. If the market price is below the equilibrium price,

a) there is a surplus of goods;

b) there is a shortage of goods;

c) the buyer's market is forming;

d) the price of resources increases.

9. Most often the market is divided into elements:

a) depending on the degree of maturity of market relations;

b) according to the economic purpose of the objects of market relations;

c) on an administrative and territorial basis;

d) in accordance with current legislation.

10. The illegal market is:

a) the market, which is characterized by the presence of non-market relations;

b) the market prohibited by law;

c) the market with limited competition;

d) the market located in a certain place.

Examples of problem solving

Task 1. Draw a table which consists of three columns: households, businesses, government. Determine which of the following belong to each of the columns: 1) current accounts of individuals in a bank with funds to be spent on private consumption; 2) a holder of shares of an enterprise; 3) an individual farm; 4) a ministry official; 5) a diamond exchange; 6) top management of Ukraine's Naftohaz group; 7) a family budget; 8) a current account of an enterprise in a bank; 9) a land tenant.

Example of doing Task 1

Households	Businesses	Government
• current accounts of individuals with funds to be spent on private consumption; • a family budget	• a holder of shares of an enterprise; • a diamond exchange; • an individual farm; • a land tenant; • a current account of an enterprise in a bank	• a ministry official; • top management of Ukraine's Naftohaz group

Task 2. The demand function for apples has the form of $Q_D = -48 + 12P$, and the supply function has the form $Q_S = 62 + 2P$, where Q is the quantity of this product; P is its price. Determine the equilibrium volume and the equilibrium price.

Example of doing Task 2

In order to calculate the equilibrium price, it is necessary to equate the function of supply and demand:

$Q_D = Q_S$;

$-48 + 12P = 62 + 2P$;

$12P - 2P = 62 + 48$;

$10P = 110$.

Thus, $P = 11$ is the equilibrium price.

In order to determine the equilibrium volume, it is necessary to equate supply or demand to substitute the equilibrium price:

$Q = 62 + 2 \cdot 11 = 84$ is the equilibrium volume.

Thus, the equilibrium price is equal to 11 UAH, and the equilibrium volume is 84.

Problems for independent solution

Task 1. Determine which of the following are market and non-market activities: a) cooking at home; b) an advertisement in a newspaper; c) state procurements of military equipment; d) state provision of unemployment benefits; e) the book market; g) growing vegetables on a plot of land for own consumption; g) growing strawberries on a land plot for sale.

Task 2. Determine which of the following are income and costs of households: salary, income from individual labor activity, land tax, income from entrepreneurial activity, tax on securities, purchase of durable goods, income from personal subsidiary farming, payment of utilities, pension, gift tax, rent, property tax, purchase of food products, insurance policies, dividends, currency, interest on deposits, promissory notes, interest on bonds, social pensions, unemployment benefits, bank deposits, bonds, scholarships, assistance to large families, free travel on public transport.

Task 3. The ice cream market has the following functions of supply and demand: $Q_D = 30 - 6P$; $Q_S = -3 + 5P$.

It is necessary to determine the equilibrium price and the equilibrium volume.

Task 4. Demand functions are $Q_D = 85 - 5P$, supply is $Q_S = 45 + 3P$. Calculate the equilibrium price and the equilibrium volume. What will the market deficit or surplus be if the price is 3 UAH?

Task 5. The demand and supply of a firm in the market are described by the equations: $Q_D = 100 - 4P$; $Q_S = 60 + 4P$. Determine the parameters of the market equilibrium.

Essay topics

1. Private property as the basis of the market economy, its advantages and disadvantages.
2. Demand and supply in the labor market.
3. The peculiar features of the natural resources market.

References: [1; 3 – 5; 12; 16 – 18; 20; 21].

5. Forms of income in a market economy. Money

The purpose of studying the theme is to form the following students' **competences:** the ability to analyze the nature and sources of rent, wages, interest rates, profits and calculate their value, to understand the essence of money and their functions in different monetary systems, to calculate the required amount of money in circulation.

Questions to study

5.1. Salary: the essence, the forms and systems.
5.2. Profit and loan interest as forms of income.
5.3. Rent as a payment for the use of land resources.
5.4. Money in a market economy.

Keywords: salary, profit, loan interest, rent, money, money functions, monetary systems, money circulation law, paper money, electronic money, digital money, crypt currency.

5.1. Salary: the essence, the forms and systems

In the economic literature, there are many points of view on the essence of salaries: J.-B. Say theory of three factors of production, M. Tugan-Baranovsky social theory, A. Marshall marginalism theory of marginal productivity, Marxist theory.

According to one point of view, **salary/wage** is a transformed form of value and price of the good "workforce". The cost of workforce is determined by the cost of goods and services needed by the worker and his family for the normal reproduction of workforce.

According to another position, **salary/wage** is payment for labour or payment for labour services.

Salary performs such functions as: reproductive, incentive, distributive.

The reproductive function means that the salary ensures the reproduction of labour.

The incentive function means that the salary motivates the worker to increase productivity.

The distributive function means that salary contributes to transferring labour resources from less efficient to more efficient industries.

There are two main **forms of wages:** hourly and piece-work wages. In the case of *hourly form* the amount of wage depends on the amount of time worked. You can calculate the hourly wage by multiplying the price of an hour of work, i.e. payment for an hour to a worker according to his speciality and qualification by multiplying the number of worked hours. *Piece-work wage* depends on the quantity of products of appropriate quality. It can be calculated by multiplying the price, i.e. payment for one product, by the number of products.

On the basis of the specified forms of salary/wage the following **systems of salary/wage** are under construction: tariff, piece and bonus, hourly and bonus, penalty, system of analytical estimation of workplaces, system of participation in profits.

Salary is an indicator of the well-being of society and its members. **Nominal salary/wage** is the amount of money that an employee receives based on the results of his work. **The real salary/wage** is the number of goods and services that an employee can buy for his nominal salary/wage. The value of real salary/wage is directly dependent on the nominal salary/ wage and is inversely related to the price level.

5.2. Profit and loan interest as forms of income

The purpose of entrepreneurial activity is to make a profit. There are several definitions of profit including the following:

a) profit is a transformed form of added value (realized added value);

b) profit is a payment for risk and uncertainty in the future;

c) profit is a payment for entrepreneurial skills;

d) profit is the return on capital as a factor of production;

e) profit is a reward to the entrepreneur for underconsumption today in order to increase capital in the future.

A distinction should be made between accounting, economic and normal profits.

The accounting profit is recognized in the documents of the accountant's accountability:

The accounting profit = receipts − external (accounting) costs.

Economists calculate **the economic profit** as follows:

$$\text{The economic profit} = \text{receipts} - (\text{external costs} + \text{internal costs}) = \\ = \text{the accounting profit} - \text{internal costs.}$$

The normal profit is the minimum amount of money an entrepreneur must receive in order to continue his own business.

Normal profit is equal to the amount of money that an entrepreneur would receive if he didn't use his entrepreneurial skills in his own business, but would perform similar duties as a manager or director as an employee of another firm. Normal profit is included in the internal costs of the enterprise.

Profit performs distributive, stimulating and informational functions.

There are absolute and relative indicators of profit. **The profit mass** is measured in absolute terms – it is the amount of money (UAH, USD) that the entrepreneur receives after deducting expenses from revenue. The relative indicator of profit is **the profit rate**. The profit rate shows the degree of profitability of investing in a particular industry:

$$\text{The profit rate} = \text{the profit mass: advanced capital} \times 100\ \%.$$

Borrowed capital is a separate part of industrial capital which is provided by its owner for usage by another person on the terms of urgency, payment and return. The movement formula of the loan capital is $D - D_1$. The source of forming capital provided in the loan is temporarily free funds of enterprises, the state and the population of public organizations.

The fee for the use of loan capital takes the form of loan interest. Loan interest is a part of the average profit paid by operating entrepreneurs to the loan entrepreneur for the granted right of temporary use of his capital.

The minimum loan interest rate is zero or slightly more. Maximum is the value of the average profit. The loan interest rate shows the degree of profitability of lending capital.

$$\text{Loan interest rate} = \frac{\text{Loan interest}}{\text{Loan capital}} \times 100\ \%.$$

The form of loan capital movement is credit. There are commercial, banking, consumer, governmental, mortgage, international credit. *Commercial* *credit* is provided by industrialists to each other in commodity form by deferred payment. *Consumer credit* is provided to the population when selling durable goods with deferred payment. *Governmental credit* is provided by the population to the state when buying government securities. *International credit* is provided by the states of some countries to states or individuals of other countries. *Bank credit* is provided in cash by specialized financial and credit institutions – banks.

Credit performs a number of functions: redistribution of funds between firms, industries, accelerating the development of scientific and technological progress, ensuring the continuity of the reproduction process, accelerating the sales process, population consumption growth, etc.

5.3. Rent as a payment for the use of land resources

Capital invested in agriculture brings income in the form of rent. Its functioning in agriculture has a number of features. First of all, the main means of production is land, the amount of land is limited and the land is different in fertility and location to markets. There are areas of best, medium and poor (but suitable for cultivation) fertility.

The next feature is the specifics of pricing. Prices of agricultural products are based on costs in the worst areas in terms of fertility and location to markets.

One more feature is the significant dependence of agriculture on biological and climatic factors; the time factor plays an important role. In agriculture, there are three main groups of people between whom land and agrarian relations are formed. These are landowners, tenant farmers and agricultural workers.

Rent is the part of the profit paid by the tenant of the land to its owner for the temporary use of the land. The rent is paid if there are any buildings on the leased land (irrigation systems, storage facilities for crops or equipment, etc.).

There are the following **types of rent**: differential and absolute monopoly.

Differential rent is divided into **differential rent of the first and second kind**. Obtaining a differential rent of the first kind is associated with differences in the fertility of different areas. The differential rent of the first kind is appropriated by the owners of the middle and best plots. Tenants of all plots receive a profit equal to the average profit.

Differential rent of the second kind is obtained from those plots of land (better, medium, worse) in which additional capital investments are made to improve the quality of land. It is appropriated by tenants or landowners who invest additional capital in the land.

Absolute rent is received by the owners of absolutely all plots in the same amount, regardless of fertility and location to markets. The reason for the absolute rent is the monopoly of private ownership of land. Land, like any other commodity, can be bought and sold.

5.4. Money in a market economy

Money emerged as a result of the development of commodity production and market relations. In turn, the advent of money has become a powerful stimulus for the further development of this economic system.

Thus, money is primarily a commodity, but a commodity that has specific properties. This product in relation to all others acts as a general equivalent. It is also a common means of circulation, i.e. an intermediary in the exchange of goods, resulting in the exchange of goods turning into their sale. As a result of these properties of money, it becomes a universal embodiment of wealth.

Based on the labour theory of value, there are five main functions of metal money: a measure of value, a means of circulation, a means of accumulation of treasures, a means of payment and world money. As for opponents of the theory of labour value, for them, the value of the product is determined by needs, demand and some other factors, in connection with which they cannot perform some of the above functions and, above all, the first one.

The first material form in which metal money appeared was ordinary ingots. They were usually weighed, as evidenced by some names, for example, the British pound sterling at one time was really a pound of silver. The Kyiv hryven or hryvnia was a unit of weight, its weight at different times ranged from 500 to 600 grams of silver. Subsequently, these ingots began to be stamped and later coins were minted. Note that the first coinage appeared in the ancient East around the 7th century BC. Later, the right to mint money was taken over by the state, which became one of their revenues.

The monetary system is a state-defined form of organization of money circulation, which has historically developed and is regulated by the laws of this state.

With the advent of the first coinage, monetary systems emerged. Initially, the main monetary metal was silver in all countries, although gold and silver coins were minted and circulated at the same time. Coins and monetary systems had their own national characteristics. However, these systems also had common features; namely, monetary systems are characterized by internal stability. The amount of money is limited by the availability of monetary metal and the needs of trade.

Note that the amount of money needed for trade is related to the total price of all goods sold, but does not match it. The fact is that some goods are sold on credit, and some debts are due. In addition, some counter-supplies may be repaid by mutual settlement. Finally, each coin or other banknote can serve not one but several trades. The result of the interaction of these factors is the amount of money that is currently needed for normal circulation of money.

The amount of money in circulation is regulated by the law of money circulation, discovered by K. Marx:

$$A = \frac{PG - Cr + PCr - Ap}{V}, \tag{5.1}$$

where A is the amount of money needed for circulation;

PG is the sum of prices of goods on the market;

Cr is the amount of prices of goods sold on credit;

Ap is the amount of payments to be offset;

V is the velocity of money.

The American economist I. Fisher discovered the equation of exchange according to which the amount of money needed for circulation is determined as:

$$M \times V = P \times Q, \tag{5.2}$$

where M is the amount of money needed for circulation;

V is the velocity of money;

P is the average price of goods;

Q is the number of manufactured goods.

The monetary system provides automatic maintenance of just such an amount of money on the market. Extra money, if it appears, is transferred to the stock or treasure.

Along with the monetary system, under the conditions of capitalism there was a credit and monetary system. Cash in it is presented by banknotes, i.e. initially unlimited bills (debt obligations) to the bank.

In accordance with the established procedure, banknotes were to be provided and, at the first request, exchanged by the bank for cash. They were a convenient means of payment, especially when it came to large sums.

There was another monetary system based on the issuance and operation of so-called paper money. The first information about it was brought by Marco Polo from China to Europe. Unlike credit money, paper money is issued by the state and cannot be exchanged for metal. The state issues it, as a rule, to cover its costs when there is a lack of regular tax revenues.

It should be mentioned that currently money circulation is increasingly served by electronic money. With its help, you can make certain payment transactions without resorting to cash.

Note that, contrary to popular belief, currency is what underlies the monetary system of the state. In this sense, currency is the national money which circulates within countries. However, between the currencies of different countries, along with other differences, there is a difference in the possibility of their entry into the world market. Currencies can be convertible, i.e. freely exchangeable, and non-convertible. In this sense, it was easiest in the presence of a monetary system. Gold and silver coins of any country were accepted everywhere by their weight.

Currently, there are no countries in the world with monetary systems. Therefore, in practice we are talking about the possibilities and conditions of the use of credit in the world market, and under certain conditions, paper money of a country. This takes into account: first, the authority of the currency, and secondly, its exchange rate, i.e. the amount of foreign money that is given for it when it is sold on the currency exchange. For example, formerly the exchange rate of UAH against USD was an officially declared amount of gold contained in these currencies.

Unlike monetary systems, which usually functioned automatically, modern monetary systems require more or less constant support from the state and state control. The state directly or indirectly as far as possible regulates the amount of money in circulation, and maintains the exchange rate in international settlements, prosecutes counterfeiters and performs a number of other more private functions.

The ephemerality of money as a means of circulation, as well as the abrasion of coins from use (for 30 years of circulation a gold coin loses 1.5 – 2 % of its weight), which turn money into tokens of value, made it possible to replace gold money with paper. This was facilitated by the activities of counterfeiters.

Paper money is a currency that has no value and replaces full-fledged gold money as a means of circulation.

Indeed, while gold money circulates because it has value, paper money, having no value, circulates only as a symbol of gold money. While the amount of gold money depends on its value, the purchasing power of paper money depends on its quantity. While the prices of goods in gold circulation depend on the value of gold, in paper circulation they depend on the number of paper notes. Finally, while commodity circulation absorbs only a certain amount of gold money, as a surplus of gold coins will go into treasures, paper money, which has no value, is absorbed by commodity circulation in any amount.

Today, there is no minting of gold coins anywhere in the world, gold prices do not affect commodity prices, gold does not form the scale of currency prices (the official price scale is eliminated). Instead of gold, commodities are "ideally" equated with paper money having no more connection with gold (its exchange for gold was stopped). Thus, gold ceased to be money; at the same time, gold was not replaced by a commodity that has its own value.

Fiat money circulates, performing the first two functions. But the use of paper money as a measure of value and means of circulation is possible if all banknotes are provided with a commodity circulating in the market. This role is performed by paper money not by equating its "value" (it does not exist) to the value of goods, but as a representative of the whole set of goods. Now any commodity is exchanged for paper money, expressing its value through equating too many commodities. As a result, paper money acquires the ability to be a general equivalent. Paper money acquires such a modified form in modern conditions.

Further development of commodity-money relations is characterized by the emergence of innovative types of money in circulation. Electronic money is a means of payment in the form of records in the electronic payment systems and is available to the payer when converted into real banknotes. They are used in calculations on the Internet.

Payment systems based on electronic money include EasyPay, Qiwi, WebMoney and others.

Digital money is an electronic analogue of cash issued by a certain organization that has a certain denomination, individual characteristics (series, number, etc.), elements of protection against counterfeiting by assuring the issuer with a digital signature, and is stored in encrypted form. The digital cash system should have the following properties: difficulties in counterfeiting digital banknotes; prevention of the possibility of reuse of the currency or its prompt detection; ensuring the anonymity of the payer, etc. DigiCash, e-Cash, PayCash, WebMoney Transfer, and other payment systems include digital money.

Recently, the question of applicability of crypt currency as a means of payment has been widely discussed. Crypt currency is a virtual currency, protected by cryptographic methods, which is a means of payments and money transfers, based on the latest technologies and not controlled by any government. Currently, the world has various options for implementing this type of currency in payment systems: Litecoin, Namecoin, Ripple, Peercoin, Bitcoin, Zcash, and others.

The growing popularity of Bitcoin and the declining role of cash are forcing financiers and bankers to consider issuing national virtual money. On the one hand, this will reduce costs in the existing payment system, and the government will strengthen control over money circulation, on the other hand it may lead to problems related to security and confidentiality. Currently, no state has issued a digital version of its national currency, but due to the rapid development of the digital economy, public authorities are beginning to realize the inevitability of the widespread use of digital payment systems.

Glossary

Money is a commodity which in relation to all other commodities acts as a general equivalent.

Economic profit is the difference between the gross income of an enterprise (or an entrepreneur) and the sum of external and internal costs of production.

Monetary system is a form of organization of money circulation determined by the state which has historically developed and is regulated by the laws of this state.

Currency is the money unit underlying the monetary system of the state.

Electronic money is a means of payment in the form of records in electronic payment systems, which is available to the payer and can be converted into real banknotes.

Digital money is an electronic analogue of cash issued by a certain organization that has a certain denomination, individual characteristics (series, number, etc.), elements of protection against counterfeiting by digital signature of the issuer, and stored in encrypted form.

Nominal wage is the amount of money that employees receive for work performed.

Real wage is the number of goods and services that employees can buy for a nominal wage.

Hourly form of remuneration is a model of remuneration which depends on the amount of time worked by employees (month, day or time).

Accounting profit is the difference between the gross income of an enterprise (or an entrepreneur) and the external costs of production.

Economic profit is the difference between the gross income of an enterprise (or an entrepreneur) and the sum of external and internal costs of production.

Normal income is the minimum amount of money that is sufficient to continue to engage in entrepreneurial activity, and not to get a job in another organization or institution.

The piece-rate form of remuneration is a model of remuneration of employees which depends on the quantity and quality of work performed.

Tasks for self-assessment

Questions for self-assessment

1. What forms of remuneration do you know?
2. Describe the essence of money.
3. What is the essence of money and what are its functions?
4. What is a loan interest rate?
5. Name the features of different monetary systems.
6. What is the essence of the law of money circulation?

7. What concepts of profit do you know?
8. What are the types of money?
9. What ensures the sustainability of paper money?
10. What types of profits do you know?

Tests

1. The level of real wages differs from the level of nominal wages in:

a) taxes;
b) loan interest;
c) consumer spending;
d) there is no correct answer.

2. The income received by the owner of such an economic resource as capital is called:

a) rent;
b) wages;
c) profit;
d) percentage.

3. Which of the types of money appeared earlier than others:

a) commodity;
b) paper;
c) metal;
d) electronic?

4. Repayment of a loan is an example of the function of money as:

a) a measure of value;
b) a means of payment;
c) a means of circulation;
d) world money.

5. Which of the following is one of the functions of money:

a) cash;
b) non-cash money;
c) credit money;
d) world money?

6. What function of money can barter perform:

a) a measure of value;
b) a means of circulation;

c) a means of payment;

d) a means of accumulation?

7. The law of money circulation determines:

a) the velocity of money;

b) the average price level;

c) the amount of money in circulation;

d) issue of non-cash money.

8. The income received by the owner of such an economic resource as labor is called:

a) rent;

b) wages;

c) profit;

d) percentage.

9. Accounting profit is equal to:

a) the difference between the income of the entrepreneur and external costs;

b) the difference between the entrepreneur's income and internal costs;

c) the difference between the income of the entrepreneur and the sum of external and internal costs;

d) marginal costs.

10. Plastic cards belong to the system of:

a) credit money;

b) paper money;

c) electronic money.

Examples of problem solving

Task 1. To ensure the normal circulation of goods the country needs 1200 billion UAH. What will the required amount of money in circulation be if the velocity of money decreases by 5 %, the volume of goods produced increases by 20 %, and prices rise by 15 %?

Example of doing Task 1

Let's take the basic price level, the amount of money needed for circulation, the quantity of goods and the speed of their circulation as 100 %.

In the current period, the index of the velocity of money is 95 % (100 % – 5 %); the index of the number of goods is 120 % (100 % + 20 %); the price index is 115 % (100 % + 15 %).

The change in the amount of money needed for circulation can be calculated using the Fisher exchange equation.

$$I_M = \frac{I_p \times I_Q}{I_v} \times 100\ \%,$$

$$I_M = \frac{115\% \times 120\%}{95\%} = 145.25\ \%,$$

Answer: the amount of money needed for circulation will increase by 45.25 % (145.25 % – 100 %).

Task 2. The mass of goods produced in the country has doubled, prices of goods have tripled. How should the amount of money in circulation change if the velocity of money remained unchanged?

Example of doing Task 2

According to the formula of quantitative exchange, the amount of money needed for circulation is determined by the formula:

$$M = P \times Q / v,$$

where P is the price of goods, Q is the number of goods sold, v is the velocity of the currency, therefore, an increase in the mass of goods and prices will increase the need for money by 6 times.

Answer: The amount of money needed for circulation will increase by 6 times.

Task 3. The goods sold in the country are worth 120 million units, with 10 million units worth of goods sold on credit. The amount of payments on debt obligations is 70 million units and the amount of mutual payments is 20 million units. The currency velocity is 8 times a year. The money supply is 40 million gold units in circulation. Determine what will happen in the economy if paper money is in circulation.

Example of doing Task 3

According to the given formula, determine how much money is needed for circulation:

M = (120 − 10 + 70 − 20) : 8 = 20 million units.

Since there is twice more money in circulation than necessary, the issuance of paper money would lead to its depreciation. Inflation would occur, resulting in double prices. With the circulation of gold money extra money would go from circulation to the sphere of accumulation.

Answer: with the circulation of gold money, 20 million will accumulate and form treasures, with the circulation of paper money prices will double.

Problem for independent solution

Task. 240 billion UAH is in circulation. In the country, prices rose by an average of 20 %, sales decreased by 10 %. The velocity of money increased by 5 %. What is the required amount of money in circulation?

Essay topics

1. Theories of wages: their essence and significance.
2. The history of money.
3. Types of money, their characteristics.
4. Theories of profit: a comparative analysis.
5. Motivation of hired labour in a post-industrial economy.

References: [1; 2; 7 – 11; 13; 14].

6. Consumer behavior in market conditions

The purpose of studying the theme is to develop the following students' **competences:** the ability to analyze the role of the consumer in market conditions, to analyze the features of consumer behavior, to form a communication strategy, to determine the methods for analysis of consumer behavior.

Questions to study

6.1. A consumer in the market economy.

6.2. Consumer behavior.

Keywords: consumer, market economy, consumer behavior, utility, marginal utility, total utility, indifference curve, marginal rate of substitution, budget line.

6.1. A consumer in the market economy

A consumer is the main subject of the market environment.

Consumers with their needs are a starting point of marketing actions of enterprises which produce and sell goods in the market.

Success and achievements of positive results by producer enterprises depend on consumers and their behavior. A satisfied consumer does not only affect an enterprise by purchasing its products but also by forming and spreading a positive estimation of the enterprise and its products.

Success of modern enterprises in the market is conditioned by orientation of their activity to the consumer:

• readiness and skills to listen to consumers and get information from them;

• defining an enterprise's mission on the basis of values which are essential for consumers;

• forming market supply according to specific characteristics of certain market segments;

• building proper relations with consumers (key clients);

• providing all employees of the enterprise with the right to participate in determining consumers' values which are constantly changing;

• creating consumer-oriented departments;

• measuring systematically the quality level of the provided goods and services as well the level of consumer satisfaction.

6.2. Consumer behavior

It is necessary to know consumer behavior when producing any goods. The theory of consumer behavior is grounded on the idea that a man behaves rationally in an attempt to maximize satisfaction of their needs.

In the economic theory there are two *approaches to estimation of consumer behavior*: cardinal and ordinal.

William Jevons (1835 – 1882), Léon Walras (1834 – 1910), and Carl Menger (1840 – 1921) proposed a cardinal utility theory in the last third of the 19th century. This theory is based on the assumption that it is possible to compare the usefulness of various goods.

The cardinal utility theory explains consumer behavior through the notion of marginal utility. Cardinalists consider that it is possible to measure the utility size of every unit of the consumed good.

Utility is an ability of the economic benefit (goods or services) to satisfy certain needs.

There is marginal and total utility.

Marginal utility (MU) is a type of utility a person acquires by consuming each successive unit of a good within one act of consumption. Marginal utility is presented as a gain of total utility from an additional unit of goods or services.

The formula for determining marginal utility is:

$$MU = \frac{TU_i - TU_{i-1}}{Q_i - Q_{i-1}}. \qquad (6.1)$$

Total utility (TU) is accumulated utility calculated by summing up the indices of marginal utility.

The formula for determining total utility is:

$$TU = MU_1 + MU_2 + MU_3 + ... + MU_i. \qquad (6.2)$$

The marginal and total utility curves are shown in Fig. 6.1.

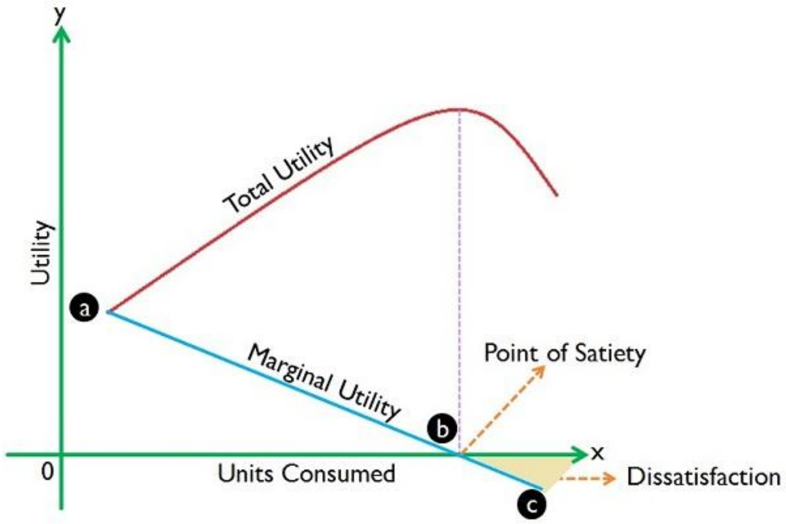

Fig. 6.1. **The marginal and total utility curves**

With the satisfaction of a consumer with a certain good, the subjective utility of this good for a consumer diminishes. It means that the law of diminishing marginal utility is in force.

The principle of diminishing marginal utility is called **Gossen's first law**, named after the German economist Hermann Gossen (1810 – 1859), who formulated it in 1854.

This law comprises two provisions. The first one is a statement about diminishing utility of each successive unit of a good within one uninterrupted act of consumption. The second one is a statement about diminishing utility of the first unit of a good by repeated acts of consumption.

Gossen's second law is the law of equimarginal utility, or law of substitution, law of indifference. The consumer maximizes utility when they get equal marginal utility for a certain price unit by consuming different goods. If the consumer "balances" their marginal utilities according to this rule, then nothing will stimulate them to change the nature of their expenditure. The consumer will be in the state of equilibrium.

The rule of equimarginal utility can be expressed mathematically:

$$\frac{MU_1}{P_1} = \frac{MU_2}{P_2} = \frac{MU_3}{P_3} = \cdots = \frac{MU_i}{P_i}, \tag{6.3}$$

where MU_1, MU_2, MU_3 is marginal utility of goods A, B, C;

P_1, P_2, P_3 is the price of goods A, B, C.

Whereas the cardinal utility theory gives only general characteristics of consumer behavior in the market, the ordinal utility theory overcomes the drawbacks of the cardinal one and shows which good is preferred by a consumer.

The ordinal theory of consumer behavior arose at the end of the 19th century. Researchers (F. Edgeworth, V. Pareto, E. Slutsky, J. Hicks, and W. R. Allen) believed that a consumer, when purchasing sets of goods, does not quantify the usefulness of the goods, but arranges them in order of preference.

The analysis instruments in the ordinal theory of consumer behavior are constituted by an indifference curve and a budget line.

An indifference curve (Fig. 6.2 A) is a geometric locus of points which show a number of sets of two goods that have equal utility for a consumer. If we place several indifference curves of the same goods on the graph, we will get an indifference map that describes consumer preferences at different levels of satisfaction of needs (Fig. 6.2 B).

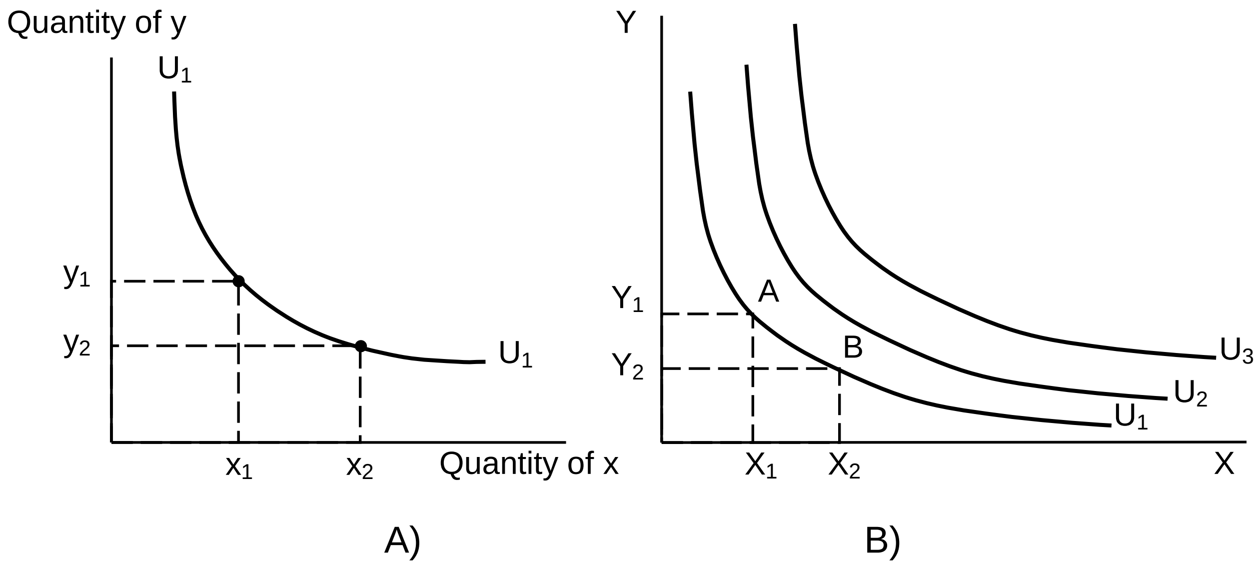

Fig. 6.2. **A) The indifference curve; B) the indifference map**

The indifference curves have a negative slope, they do not cross. For goods which are neutral to each other (e.g. coffee and a cake) the indifference curves are bent inwards in regard to the origin of coordinates. If the goods are rigid complements (e.g. skis and their binding), the indifference curves look like perpendicular lines. If the goods are absolute substitutes (e.g. kefir and buttermilk), the indifference curves look like straight lines.

If the indifference curves are parallel to axes X or Y, no matter how the quantity of a certain type of goods might change, the consumer would never change consumption of other types of goods (e.g. oranges, or cigarettes for a non-smoker).

An important feature of an indifference curve is **the marginal rate of substitution**. It shows the amount of one good which a consumer should refuse from for the sake of increase of another good by one unit, in case the total utility is invariable.

The marginal rate of substitution is characterized by a decreasing trend:

$$MRS_{XY} = \frac{\Delta Y}{\Delta X}, \qquad (6.4)$$

where MRS_{XY} is the marginal rate of substitution;

Y is the amount of a good that the consumer refuses to consume;

X is the increase in the amount of the good the consumption of which has increased.

While indifference curves characterize consumer preferences, a budget line describes restrictions in consumer behavior concerning this income and prices of goods.

A budget line is a straight line with points on it showing certain sets of two goods which require equal expenditures from a consumer within their budget (Fig. 6.3).

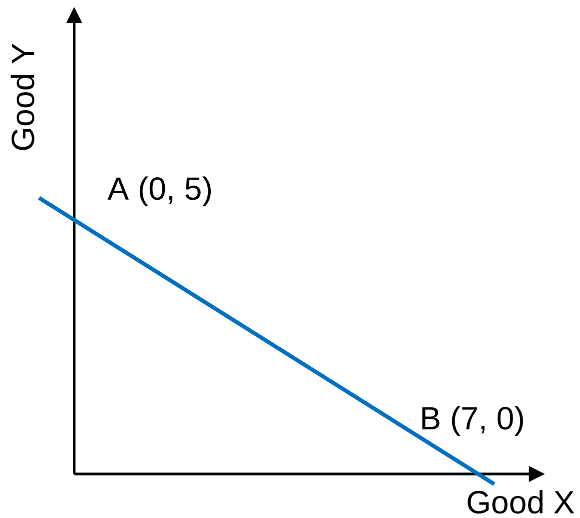

Fig. 6.3. **The budget line**

The budget line equation is as follows:

$$I = P_a \times Q_a + P_b \times Q_b, \qquad (6.5)$$

where I is consumer income;

P_a, P_b is prices of goods A and B;

Q_a, Q_b is volumes of consumption of goods A and B.

The inclination of the budget line is indicated by correlation of the price of goods, whereas the position in space is indicated through the budget change by fixed prices.

In order to determine a set of goods that helps a consumer to maximize utility when he is *in the state of equilibrium*, it is necessary to overlap the graph of the budget line with an indifference map (Fig. 6.4).

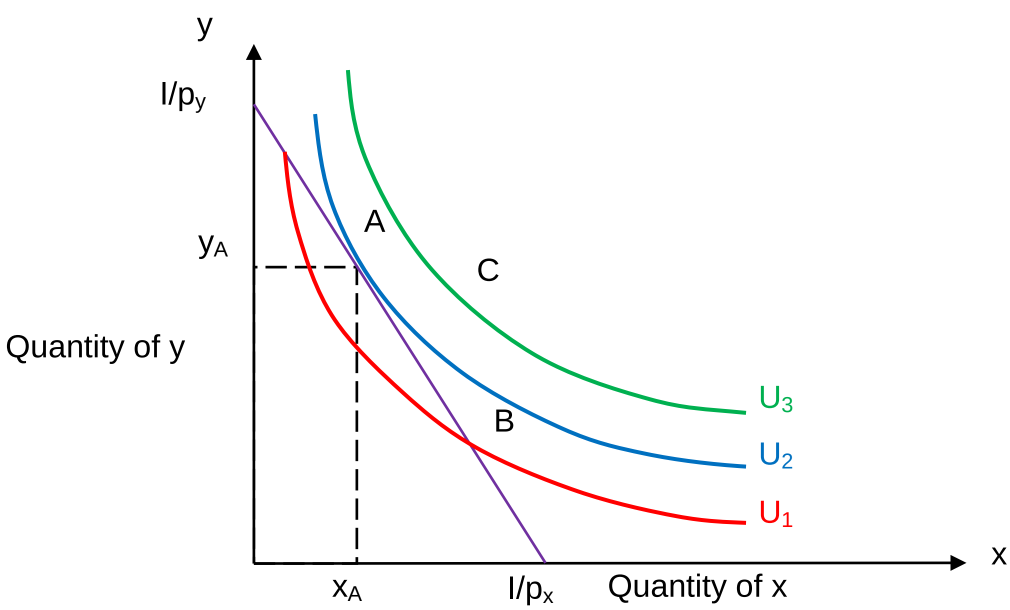

Fig. 6.4. **The consumer equilibrium**

The consumer will get the maximum utility if they acquire a set of goods that corresponds to the point in which the budget line touches the indifference curve, which is mostly remoted from the origin of coordinates.

The consumer equilibrium is a situation when he spends his given income on the purchase of one or more goods in such a way that he gets maximum satisfaction and has no urge to change this level of consumption, given the prices of goods.

The consumer will be in the state of equilibrium when the following condition is fulfilled: the marginal utility of goods X (MU_x) is equal to the price of goods X (P_x).

The consumer's choice is influenced by two basic factors: the consumer's income and the price of goods.

All the goods consumed can be roughly divided into superior and inferior ones.

Superior goods are those of normal quality whose consumption is increased due to the income increase (luxury goods).

Inferior goods are those whose consumption decreases due to the income increase (goods of low quality, or "goods for the poor").

For superior goods, with the increase of the consumer's income the graph of the budget line is displaced to the right, further from the origin of coordinates. If we combine all the points of equilibrium which correspond to different levels of income, we will have a line "income – consumption". It looks like an upline.

For inferior goods whose consumption diminishes with the increase of the consumer's income, the line "income – consumption" has a negative slope.

On the basis of the line "income – consumption" one can construct Engel curves, which indicate correlation between the size of the consumer's income and the quantity of the goods bought. For superior goods it has a positive slope. In the course of the income increase, consumption of inferior goods first increases and then starts decreasing.

Besides income, the consumer's choice depends on changes in prices for goods. With the change of price for certain goods, the slope of the budget line changes as well. If we combine the points of the consumer equilibrium concerning the change in the price for a certain type of goods, we will have a curve "price – consumption". If the consumer positions the goods as full-rated (superior), they react to the change in the price of these particular goods. Such a reaction of the consumer is a consequence of two effects – the substitution effect and the income effect.

The substitution effect indicates that a consumer switches to other goods that have become cheaper, to substitute those that are more expensive.

The income effect is due to the fact that with a further decrease in the price of goods, the demand for both types of goods increases with the invariable income.

Glossary

Utility is an ability of the economic benefit (goods or services) to satisfy certain needs.

Marginal utility is a type of utility a person acquires by consuming each successive unit of a good within one act of consumption. Marginal utility is presented as a gain of total utility from an additional unit of goods or services.

Total utility is accumulated utility calculated by summing up the indices of marginal utility.

An indifference curve is a geometric locus of points which show a number of sets of two goods that have equal utility for a consumer.

A budget line is a straight line with points on it showing certain sets of two goods which require equal expenditures from a consumer within his budget.

Tasks for self-assessment

Questions for self-assessment

1. Define the concept "utility".
2. Specify the essence of total utility.
3. Give definitions of the concept "marginal utility".
4. What theoretical approaches to utility do you know? What is their essence?
5. How does a consumer choose a particular combination of goods?
6. How does the price of goods affect consumer choice?
7. What does the indifference curve show? A map of indifference curves.
8. What is the practical significance of the theory of marginal utility for consumers and producers?
9. Describe the conditions of the optimal consumer choice.
10. What is a budget limit?

Tests

1. The main approaches to estimation of the consumer behavior are:

a) Keynesian and cardinal;

b) cardinal and ordinal;

c) ordinal and Keynesian;

d) there is no correct answer.

2. Marginal utility is:

a) the fact that with a further decrease in the goods price the demand for both types of goods increases with the invariable income;

b) an ability of the economic benefit (goods or services) to satisfy certain needs;

c) accumulated utility calculated by summing up the indices of marginal utility;

d) a type of utility a person acquires by consuming each successive unit of a good within one act of consumption.

3. Total utility is:

a) the fact that with a further decrease in the goods price, the demand for both types of goods increases with the invariable income;

b) an ability of the economic benefit (goods or services) to satisfy certain needs;

c) accumulated utility calculated by summing up the indices of marginal utility;

d) a type of utility a person acquires by consuming each successive unit of a good within one act of consumption.

4. According to the representatives of the cardinal approach to estimation of the consumer behavior, a rational consumer aims to maximize:

a) marginal utility;

b) total utility;

c) average utility.

d) there is no correct answer.

5. Which of the following types of utility tends to increase:

a) total utility;

b) average utility;

c) marginal utility;

d) there is no correct answer.

6. Gossen's first law is:

a) the law of diminishing marginal utility;

b) the law of decreasing marginal productivity;

c) the law of equimarginal utility;

d) determining the consumer equilibrium.

7. Gossen's second law is:

a) the law of diminishing marginal utility;

b) the law of decreasing marginal productivity;

c) the law of equimarginal utility;

d) determining the consumer equilibrium.

8. The consumer equilibrium is reached at the point of:

a) intersection of the budget line and the indifference curve;

b) touching the budget line and the indifference curve;

c) intersection of the budget line and the Engel curve;

d) touching the indifference curve and the Engel curve.

9. Superior goods are:

a) goods of normal quality whose consumption is increased due to the income increase;

b) goods whose consumption decreases due to the income increase;

c) goods that are used in place of another;

d) there is no correct answer.

10. Inferior goods are:

a) goods of normal quality whose consumption is increased due to the income increase;

b) goods whose consumption decreases due to the income increase;

c) goods that are used in place of another;

d) there is no correct answer.

Examples of problem solving

Task 1. At what values of the parameters X and Y will the consumer be in the state of equilibrium (Table 6.1)? Explain the solution.

Table 6.1

The dataset for the task

Goods	MU (marginal utility), u	P (price), UAH
A	MU_X	7
B	24	3
C	16	P_Y

Example of doing Task 1

According to Gossen's second law, the consumer is in equilibrium when the equimarginal utilities of the consumed goods are equal. That is, when the marginal utilities of the consumed goods divided by the prices of these goods are the same.

According to the dataset for the task for good B, the equimarginal utility is 24/3 = 8 u. Thus, for good A, the marginal utility will be MU_X = 7 x 8 = 56 u. The price of good B for the consumer in equilibrium is P_Y = 16/8 = 2 UAH.

Task 2. Calculate the marginal rate of substitution of nectarines for pears if the consumer uses the goods in proportions shown in Table 6.2.

Table 6.2

Dataset for the task

Set of goods	Nectarines	Pears
A	2	8
B	4	5
C	5	3
D	7	1

Example of doing Task 2

The marginal rate of substitution of nectarines for pears shows how many pears should be abandoned in order to increase the consumption of nectarines per unit.

In the transition from A to B variant, the marginal rate of substitution is (5 − 8) / (4 − 2) = −1.5 pears.

In the transition from B to C variant, the marginal rate of substitution is (3 − 5) / (5 − 4) = −2 pears.

In the transition from C to D variant, the marginal rate of substitution is (1 − 3) / (7 − 5) = −1 pear.

Problems for independent solution

Task 1. Jack likes to drink tea. The overall utility data is presented in Table 6.3. Calculate marginal utility, draw marginal and total utility curves.

Table 6.3

The dataset for the task

The number of cups of tea	Total utility (TU), u	Marginal utility (MU), u
4	17	
8	33	
10	39	

Task 2. For a consumer, consuming a chocolate bar at a cost of 1 USD brings 5 u satisfaction. How much pleasure (in u) will it give him to consume one can of Pepsi at a cost of 3 USD? What is the price of a chocolate bar that brings pleasure of 24 u if the consumer is in the state of equilibrium?

Task 3. Let's say Michael has an income of 1250 euros. He spent all the income on the purchase of two goods: good A at a price of 20 euros per unit and good B at a price of 25 euros per unit. Draw a budget line that meets these conditions.

Task 4. Jenny spends 4,000 UAH to buy good A at 80 UAH per unit and good B at 200 UAH per unit. Draw a budget line and show how it will change if, with a constant budget, the price of good A increases to 100 UAH, and the price of good B decreases to 180 UAH?

Task 5. The marginal utility of avocados is given as a function: $MU_{av} = 10 - X$, the marginal utility of mango is defined as a function: $MU_m = 21 - 2Y$. What is the optimal combination of goods if the consumer's income is 10 USD, and the price of both goods is 1 USD per kg?

Essay topics

1. Utility of goods. Utility theories.
2. The role of the consumer in market conditions.
3. A graphical model of consumer behavior.

References: [15 – 17; 19; 20].

7. The national economy and the results of its operation

The purpose of studying the theme is to form the following students' **competences**: the ability to determine the nature and basic features of the national economy, its goals and results, to give a general description of the peculiarities of the functioning of the national economy as a subsystem of the world economy.

Questions to study

7.1. Economy as a whole organism.

7.2. The macroeconomic indicator "gross domestic product" (GDP) and calculation of GDP. GDP and living standards in different countries.

7.3. The efficiency of the national economy.

Keywords: national economy, world economy, international division of labour, world market, production efficiency, economic efficiency.

7.1. Economy as a whole organism

The modern conception of a national economy implies a set of a country's all economic subjects united in a single organism by multilateral economic ties and interests.

All socioeconomic processes taking place in the national economic system include material, labour, financial, natural and other resources involved in economic turnover, and their aggregate interaction makes a single process of reproduction which can be reduced to four main types of activity: production, exchange, distribution, consumption.

To carry out the production process, the state does not only need to have certain production resources. Production technology in the economic sense is a way to combine material and personal factors of production in a single process in order to produce the necessary benefits of life. Technological means of production presuppose different stages of development of the national economic system based on the following indicators:

1) the level of development of productive forces, i.e. the level of means and objects of labour, labour, technology;

2) the level of development of organizational and economic relations, i.e. the depth of division and specialization of labour, the scale of its co-operation and combination, the development of organizational structures;

3) forms of ownership of means of production;

4) changes in the economic mechanism of regulation.

The continuously repetitive process of production on the scale of society is called **social reproduction**.

There are three types of social reproduction: simple, narrowed and expanded. Social reproduction consists of two subdivisions. **The first subdivision** contains the industries that produce means of production, that is, the branches of mechanical engineering, machine tool construction, and the chemical industry etc.

The second subdivision of social reproduction consists of industries that produce personal consumer goods: these are the light, food, dairy industries, agriculture, and so on.

Carrying out the reproduction and sale of the product under the condition of simple reproduction requires compliance with certain proportions.

The first condition for simple reproduction is that all products of the first subdivision must be equal to the amount spent on production in both subdivisions.

The second condition of social reproduction is that all products of the second subdivision must be equal to the sum of wages and value added in both units to meet the needs of workers and entrepreneurs for consumer goods.

The third condition is that the newly created value of the first subdivision must be equal to the production costs in the second subdivision, i.e. the unsold products within the first subdivision must be equal to the unsold products within the second subdivision.

In the real practice of national economy, all processes of reproduction: develop in unity and interconnection, according to objective economic laws; do not tolerate voluntarism, i.e. voluntary interference in their content and development; are influenced by factors and conditions that should be taken into account when making economic decisions;

In the national economy, every entity, be it an economy, a firm, a region or a state, joining the economic space, has its own interest. The coordination of interests is conditioned by objective economic laws and is reflected in the national economic interest.

Interests are formed through economic relations between social factors involved in production, distribution and exchange. The main subjects of economic interests that are formed in the process of economic relations are: people, enterprises, state and society. In the conditions of economic independence of producers, scientific organizations and territories new carriers of interests appear: territorial and branch, interbranch, industrial and scientific and industrial associations.

For the development of the national economy as a whole, the realization of the interests of all actors is an important condition. The realization of the general public interest can be ensured by the realization of the group and individual interest. The main condition is to ensure the common interests of all levels. The content of each type of interest is of great importance for the creation of a certain system of incentives in the field of production and services. Thus, the economic interests of the state express both the need to ensure social welfare of society, and to develop the national economy.

The national economy strives for stability, efficiency, justice by achieving the following goals:

1. Stable growth of national production.
2. High and stable employment.
3. Stable price level.
4. Maintenance of external balance.

These goals are achieved through the use of certain **tools of macro-economic regulation**, which are:

1) fiscal policy (management of a state budget through the tax system and government spending);

2) monetary policy (control over the money supply with the help of interest rates, reserve ratio and other instruments);

3) income regulation policy (from free setting of wages and prices to maternity control);

4) foreign economic policy (trade policy, exchange rate regulation).

The general and end result of the functioning of the national economy of any country is an increase in national wealth, the amount of profitable and necessary for society goods and services, the most efficient use of limited human and material resources.

7.2. The macroeconomic indicator "gross domestic product" (GDP) and calculation of GDP. GDP and living standards in different countries

According to **the system of national accounts** which is generally accepted in the world the following indicators of the results of social reproduction are distinguished: gross domestic product (GDP); gross national product (GNP); net national product (NNP); national income (NI); personal income (PI).

Gross domestic product (GDP) is the total market value of final goods and services created in a country for a certain period (usually a year). The method for calculating GDP based on final costs (end use) includes the following items:

a) final costs of households (C). They consist of consumer spending on goods of daily demand, long-term use and costs of services;

b) government costs (G). These are the costs of purchasing products of enterprises and resources for the needs of the state which are expressed in the amount of its costs for the payment of salaries to civil workers, the purchase of goods and services. In the current UN SNA Standard of 1993, the first two categories of costs are combined into one indicator of final consumption, which is divided into individual and collective final costs;

c) gross investment (I), which consists of the cost of fixed assets (i.e. purchase of machinery and equipment, construction), the increase (decrease) in inventories of working capital (only inventories of finished goods and work in progress are taken into account), acquisition excluding disposal values;

d) net exports (Xn), which is equal to the difference between exports and imports of a country. It shows the net consumption of goods and services by foreign countries.

Thus, the formula for determining GDP by the cost method is as follows:

$$GDP = C + G + I + Xn.$$

The method for calculating GDP by the income method (distribution method) includes the following items:

a) wages of employees;

b) gross profit, mixed income, consisting of:

• profits of firms and corporations;

• income of unincorporated enterprises that are in individual or family ownership, and income of self-employed workers – artists, writers, lawyers and other non-employed workers;

• rent, i.e. income received by owners of land, real estate, etc.;

• interest on loan capital;

• depreciation;

c) indirect taxes on production and imports (value added tax, sales taxes, excise duties, etc.). This excludes subsidies for production and imports. In the practice of a market economy, this article is considered as state revenue.

GDP, calculated using all three methods, should be equal to one value.

It should be remembered that the calculation of GDP does not cover transactions and services that are not accurately accounted for. For example, the exceptions in determining GDP are: the income of the shadow business; unaccounted work of housewives in their household; the work of freelance scientists; barter exchange; payment in the form of tips, etc. All methods for calculating GDP do not include so-called non-productive agreements (for example, transfer fees), financial transactions (purchase and sale of securities) and "second-hand" goods.

Gross national product (GNP) is the aggregate market value of final goods and services created over a period of time (usually per year), national capital and labour both in the country and abroad.

Net domestic product (NDP) is the gross domestic product cleared of material costs. It is less than gross domestic product by the annual amount of depreciation of fixed capital.

National income (NI) is a newly created value on the scale of society, which is equal to the sum of factor incomes earned in all sections of society in the current year as a result of the use of available economic resources. National income is less than the net national product by the amount of indirect business taxes (excises, value added tax, etc.).

Personal income (PI) is income that is not generated but received by business entities during a year. It is formed by subtraction from the national income of corporate income taxes and deductions for social insurance, and then adding retained earnings of corporations and transfer payments.

There is another general indicator of the development of society – national wealth.

National wealth is a set of produced and accumulated society material and intangible values, which society has at its disposal at this time. In terms of material content national income includes natural wealth (land, minerals, forests, air), material wealth (means of production, consumer goods); intangible wealth (people with their abilities, achievements in science, art, culture, accumulated industrial experience, securities, national currency).

7.3. The efficiency of the national economy

As measures of the gross annual volume of the final producer and primary income, GDP and GNI are necessary, but not sufficient for macro-economic analysis. That is why the 1993 UN SNA provides for several inter-related flow indicators that complement GDP and GNI. Their main features are that they are only indicators of income. They do not characterize the cost of final production, but only the income received by individuals and legal entities from various activities both in the country and abroad.

Macroeconomic indicators of income include the indicator of gross national income (GNI), which until 1993 was called "gross national product". GNI is calculated by the formula: GNI = GDP + DN, where GDP is the gross domestic product; DN is the difference between income received by non-residents of the country abroad, and income received by non-residents in the country (net factor income).

Like GDP, the GNI indicator includes depreciation deductions, which are not income in nature. Therefore, along with GNI, the indicator of net national income (NNI) is used. It is determined by the formula:

$$\text{NNI} = \text{GNI} - \text{Depreciation.}$$

Thus, this indicator does not characterize gross, but net income received by residents of the country. It should be assumed that in the literature there is still the old name of this indicator – "net national product" (NNP). NNP and NNI are not different indicators, but different names of the same indicator. The 1993 UN SNA Standard uses the name "net national income".

Neither GNI nor NNI is the income used by the country's residents for consumption and savings. Traditionally, this indicator was considered to be the national income of the country, which was equal to the NNI, reduced by the amount of indirect taxes. It was believed that the NI characterized the newly created value – the value created by living labour during a year, which does not include the transferred value of funds and items of labour (depreciation and the cost of intermediate products respectively).

At the same time, a distinction was made between produced and used NI. The used NI was equal to the produced NI, reduced by the amount of losses and the foreign trade balance. However, this calculation of the country's net value added had some shortcomings. Firstly, the exclusion of indirect taxes is illegal because they are used by the state to pay pensions, scholarships, wages or purchase of products, often agricultural. That is, indirect taxes are directed to consumption. Secondly, the redistribution of income is not taken into account, because in the former USSR foreign economic relations were monopolized by the state, and within the country the redistribution of income did not change its size.

The 1993 UN SNA provides for other indicators – gross disposable income (GDI) and net disposable income (NDI). NDI is equal to GNI, increased by the difference between current transfers received by residents from other countries and provided by residents to representatives of other countries.

NDI is equal to GNI, reduced by depreciation deductions, or NNI, increased by the difference between current transfers received by residents from other countries and provided by residents to representatives of other countries.

Transfers are economic transactions through which some institutional units transfer goods, services, assets or property rights to other institutional units free of charge and irrevocably.

It is the indicator of the NDI according to the UN SNA adopted in 1993 that is the new value that society uses for consumption and savings. Indeed, the indicator of net disposable income is obtained from GDP by subtracting depreciation and adding net income from abroad from production activities and redistribution of income. Thus, net disposable income is income that is at the disposal of society.

The accumulation fund is used for the development of production, and the consumption fund is used to meet the material and cultural needs of people and society as a whole. The question of the ratio of consumption and accumulation funds concerns the fundamental interests of society. Given the high share of the accumulation fund, today's interests are sacrificed in the name of the future. And if, on the contrary, the consumption fund grows faster to the detriment of the accumulation fund, the population will have a consumer gain in the near future, but later it will not be provided with sufficient growth of production and consumption.

Therefore, it is absolutely necessary to optimize the funds under consideration, and hence to optimize the rate of increase in production and consumption. If the growth of consumption is ahead, the society will "eat" the stocks it has, and after a while will find itself in front of an empty bowl.

Unreasonable reduction of the accumulation fund leads to a reduction of capital investments designed for the development of production and non-productive sphere. The norm of accumulation, which is equal to the ratio of the accumulated part of the NNI to its entire value, is of vital importance. However, the accumulation rate itself is not as important as the efficiency of accumulation, which is mainly determined by the extent to which it provides the innovation process. The economic significance of increasing the efficiency of accumulation is that it makes it possible to accelerate the increase in productivity of social labour and curb the growing return on investment in the presence of the same or lower accumulation rate, increase production and consumption.

The growth rate of national income depends on three main factors – the increase in the mass of labor used in production; increasing labor productivity and saving means of production.

The defining features of national wealth (NW) as an economic category are its:

a) materiality;

b) accumulation;

c) long-term usage;

d) renewal through a combination of natural forces and human labour;

e) alienation and the ability to be under certain circumstances subject to market demand.

Thus, national wealth (NW) is a set of material goods created by labour, accumulated by society for the entire period of previous development of intangible assets, as well as natural resources involved in economic turnover.

NW includes: fixed and non-productive assets (buildings and structures for industrial purposes, machinery and equipment, housing and cultural and social and public funds); working capital of material production which includes inventories in production and trade, as well as state reserve and insurance stocks; population's personal property of durable use; natural resources involved in the process of reproduction (mineral reserves, hydropower, forest and land funds). National Wealth is the material and technical basis for the development of society, it determines the possibilities of reproduction of the social product, the material and cultural standard of living of people.

In the broadest sense, national wealth includes intangible values, spiritual values, which are managed by society – the accumulated experience of people, their educational potential, the achievement of scientific and technical thought, information resources and cultural values. At the same time, under the influence of STR the role and importance of intangible wealth in society increases.

Glossary

Gross domestic product (GDP) is the total market value of final goods and services created in the country over a period of time (usually a year).

Gross national product (GNP) is the aggregate market value of final goods and services created over a period of time (usually a year), national capital and labor both in the country and abroad.

Net domestic product (NDP) is a gross domestic product, cleared of material costs.

National income (NI) is a newly created value on the scale of society, which is equal to the sum of factor incomes earned in all areas of society in the current year as a result of using available economic resources.

National wealth is a set of produced and accumulated material and intangible values which society has at its disposal at a certain time.

Tasks for self-assessment

Questions for self-assessment

1. Name the main prerequisites for forming a national economy.
2. What are the main criteria for classifying a national economy?
3. Name the main and secondary goals of a national economy.
4. Name the factors on which the results of a national economy depend on.
5. What determines the international division of labour?
6. How does the internationalization of production affect the development of the world economy?
7. Name the main features of the world market.
8. What are the criteria to differentiate national economies?
9. What is the difference between production and economic efficiency?
10. What is the purpose of calculating the various performance indicators of a national economy?

Tests

1. The transfer payments are:

a) payments to households that are not due to the provision of goods and services on their part;

b) only payments of the state to individuals;

c) the component of income that is not included in national income;

d) all answers are correct.

2. Which of the following is part of GDP:

a) government bonds bought by your family on the secondary stock market;

b) a used car purchased by your family;

c) a textbook purchased in a local store;

d) housewife services?

3. Personal income is:

a) the value of goods and services produced during a year;

b) income received by households over a year;

c) GDP excluding depreciation;

d) income received by households over a year, excluding taxes.

4. National income is:

a) investments other than savings;

b) the cost of durable goods and services;

c) personal income plus individual taxes minus net subsidies to state-owned enterprises;

d) rent, wages, interest on capital, property income and corporate profits.

5. Gross private investment is taken into account in the calculation of:

a) GNI by the method of income flow;

b) GNI by the cost flow method;

c) NNI by the cost flow method;

d) personal income.

6. Wages are taken into account in the calculation of:

a) GNI by the method of income flow;

b) GNI by the cost flow method;

c) NNI by the cost flow method;

d) personal income.

7. Net national income (NNI) is equal to gross national income (GNI), from which ... is deducted:

a) depreciation;

b) wages and depreciation;

c) taxes;

d) wages, depreciation and taxes.

8. When calculating national income you cannot sum up:

a) consumer spending and personal savings;

b) net investment and consumer spending;

c) corporate profits and interest payments on the loan;

d) public procurement, wages and salaries.

9. If the volume of real GNI decreased by 6 %, and the population in the same year decreased by 3 %, then:

a) real GNI per capita decreased;

b) real GNI per capita increased;

c) real GNI increased, and nominal GNI decreased;

d) prices fell by 3 %.

10. Which of these aggregates are not included in the GNI, calculated by the cost method:

a) gross investment;

b) net exports of goods and services;

c) public procurement of goods and services;

d) wages and salaries.

Examples of problem solving

Task 1. Prove that with the following results of society activity simple reproduction is provided:

I 4,000 C + 1,000 V + 1,000 m = 6,000;

II 2,000 C + 500 V + 500 m = 3,000.

Example of doing Task 1

Simple reproduction is carried out if three conditions of reproduction and realization are fulfilled. The first condition is that the value of the products of the first subdivision must be equal to the sum of the fixed capital of both subdivisions. In this example: 6,000 W = 4,000 C + 2,000 C.

The second condition is: the value of the products of the second subdivision must be equal to the value added of entrepreneurs and the wages of workers in both subdivisions. In this example: 3,000 W = 1,000 V + 1,000 m + + 500 V + 500 m.

The third condition is: I (V + m) = II C. In this example: 1,000 V + 1,000 m = = 2,000 C.

Thus, all three conditions of simple reproduction are fulfilled. Hence, simple reproduction is ensured in society.

Task 2. Gross domestic product is 800 billion UAH. The annual amount of depreciation is 120 billion UAH. Determine the amount of the net domestic product.

Example of doing Task 2

Net domestic product = gross domestic product – depreciation = = 800 billion UAH – 120 billion UAH = 680 billion UAH.

Thus, net domestic product, excluding material costs (depreciation) is equal to 680 billion UAH.

Problems for independent solution

Task 1. Prove that the following results of society provide a simple reproduction:

I 2,000 C + 500 V + 500 m = 3,000;

II 1,000 C + 250 V + 250 m = 1,500.

Task 2. Gross domestic product is 14 billion UAH. The annual amount of depreciation is 2 billion UAH. Determine the amount of the pure domestic product.

Task 3. Calculate the value of net exports of a country if it is known that the components of GDP are: consumer spending is 87 units, government spending is 35 units, net investment is 15 units, transfers are 5 units, depreciation is 7 units. GNI of the country over the same period was 129 units, and the net foreign factor income earned abroad was 7 units.

Task 4. The structure of the country's GDP as a percentage of nominal GDP is as follows: consumer spending is 48, net investment is 15, public procurement of goods and services is 27, net exports are 5, depreciation is 5. Calculate nominal and real GDP if it is known that this year, the gross investment is 200 billion units, and the GDP deflator is 125 %.

Task 5. Calculate the personal income of the population according to the following data: wages make 25 units, net interest is 35 units, deductions from wages to social funds are 56 units, rent is 8 units, mixed income is 21 units, domestic social transfers make 28 units, net social external transfers are 3 units, dividends are 6 units.

Essay topics

1. National wealth.
2. The main macroeconomic indicators of income.
3. Macroeconomic indicators in the system of national accounts.

References: [1; 2; 7 – 11; 13; 14].

8. Economic growth and cyclical fluctuations

The purpose of studying the theme is to form the following students' **competences**: understanding the essence of economic growth; the ability to distinguish between extensive and intensive types of economic growth, to analyze the impact of a system of factors on the nature of economic development; understanding the essence of the economic cycle and the nature of successive changes in its phases; the ability to characterize the influence of the state on economic cycles and crises, to determine the nature of employment and its types, unemployment and its types, the ability to analyze the mechanism of forming macroeconomic instability through the manifestation of inflation and its socioeconomic consequences.

Questions to study

8.1. Economic growth and development.
8.2. Cyclical market economy. The economic cycle and its phases.
8.3. Employment and unemployment.
8.4. Inflation as a macroeconomic phenomenon.

Keywords: economic development; extensive type of economic growth; intensive type of economic growth; economic cycle; phases of the economic cycle; crisis; depression; recovery; rise; long waves of economic dynamics; forced, full, effective, productive, voluntary employment; frictional, structural, cyclical, voluntary and forced unemployment; people outside the labour force; unemployment rate; employment policy; inflation; money emission; state budget deficit; disinflation; deflation; GDP deflator; anti-inflation policy; economic and social consequences of inflation.

8.1. Economic growth and development

Economic growth is an expanded reproduction of a social product which is characterized by constant, progressive quantitative and qualitative changes in the volume of output. The dynamics of economic growth is evidenced by the growth of macroeconomic indicators: gross domestic product, gross national product, national income. Economic growth is the basis of socio-economic development.

Socioeconomic development is a process of continuous change of the material basis of production, as well as the whole set of various relations between economic entities, social groups.

There are two types of economic growth: **extensive** and **intensive**.

In the first case, the increase in social product is due to quantitative increase in the factors of production: involvement of additional resources of labour, capital (means of production), and lands in the production. The technological base of production remains unchanged. Provided this type of economic growth, output growth is achieved through growth in the number of workers of constant skill level and increase in the number of equipment of the same technological level. As a result, output per employee remains the same. Extensive factors of economic growth are: increase in the number of employees; increase in the physical volume of capital.

The basis of the intensive type of economic growth is the rising efficiency of production, increase in the return on the use of all factors of production, improvement of production technology and the quality of basic factors of production. Intensive factors of economic growth are: technological progress, level of education and professional training, savings due to an increase in the scale of production, improved allocation of resources; legislative, institutional and other factors.

In the conditions of the scientific and technological revolution, which is manifested in the series of industrial revolutions, the predominant type of development is intensive economic growth. The projected event is the fourth industrial revolution – the mass introduction of cyber physical systems in the production and maintenance of human needs, including life, work and leisure.

Growing needs, depletion of traditional resources, growing population determine the solution of a dual problem: economic growth and economic efficiency. Economic growth leads to an increase in the amount of benefits created, and, consequently, a rise in living standards.

However, the increase in production and consumption may be the result of certain negative factors, for example, deterioration of material goods, severe exploitation of resources, non-compliance with environmental protection requirements, and so on. Such growth is unstable in general devoid of socio-economic content.

Therefore, economic growth makes sense when it is combined with social stability and social optimism. This growth involves the achievement of a number of balanced goals: increasing life expectancy, reducing morbidity and injuries; raising the level of education and culture; more complete satisfaction of needs and rationalization of consumption; social stability and people's confidence in their future; overcoming poverty and significant gaps in living standards; achieving maximum employment; environmental protection and environmental safety; reduction of crime.

Resources of economic growth are limited, which necessitates an optimal choice of involvement of these resources in production.

Extensive and intensive types of economic growth are opposites that are in organic unity. In the real process of expanded reproduction, they coexist, merge, and fuse together, making it difficult to distinguish one type of economic growth from another. Therefore, they often talk about a mostly extensive or mostly intensive path of economic growth.

The transition from a predominantly extensive to a predominantly intensive type of economic growth is a process that involves shifts in the structure of social production and a change in the priorities of economic development. During the transition from one type to another, economic growth slows down, but at the same time structural shifts intensify.

Optimal rates of economic growth are based on the macroeconomic balance of the national economy and at the same time they are the most important condition for provision of national economy. They should not be too high, because too high a rate of development, as macroeconomics proves, leads to inflation.

A system of national settlements approved by the UN is used to assess economic growth, its dynamics, rates and other indicators around the world. At the same time, such indicators as life expectancy, the amount of free time, and so on, are becoming increasingly important.

When studying economic growth, it is necessary to keep in mind the factors that most affect it.

All factors of economic growth can be divided into the following:

1) supply (natural resources, labour resources, fixed capital, scientific and technological progress);

2) demand (aggregate demand);

3) distribution (efficient allocation of resources).

Supply factors provide physical growth, i.e. increase in the production of real product. But these factors are only prerequisites for economic growth. For this to actually happen, aggregate demand must grow accordingly.

It should be noted that there are factors holding back economic growth. These include restrictions on aggregate demand, the sociopolitical atmosphere in the country, resource and environmental constraints, government intervention.

8.2. Cyclical market economy. The economic cycle and its phases

The market economy is characterized by periods of mostly extensive and mostly intensive types of economic growth. The basis of such alternation is primarily the cyclical nature of economic development.

Economic cycle and economic crisis. The cyclical nature of economic development manifests itself in a continuous fluctuation of the market economy, when the growth of production is replaced by a decline, the increase in business activity is followed by a decrease. Cyclicality is characterized by periodic ups and downs of market conditions.

Periods of increasing economic activity are mainly characterized by extensive development, while periods of declining economic activity mean the beginning of mostly intensive development. Thus, the cycle is a constant dynamic characteristic of a market economy; without it there is no economic development. The economic cycle is a form of movement and development of a market economy.

The basis of the economic cycle is periodically occurring economic crises. The movement of production from one economic crisis to the beginning of another one is called the economic cycle.

The economic cycle includes four phases: crisis, depression, revival and recovery. The main phase of the economic cycle is the crisis. It contains the main features of the cycle. One period of development ends and a new one begins. Without the crisis, there would be no cycle, and the periodic recurrence of the crisis gives the market economy a cyclical nature.

Each crisis matures in the phases of revival and recovery. These are phases of sustainable expansion of production. During this period, incomes increase and aggregate consumer demand grows. The growth of consumer demand encourages entrepreneurs to expand production capacity and increase investment. Consequently, the demand for means of production is growing. The increase in aggregate demand is beginning to outpace the growth of social production. The circulation of individual capital flows smoothly, the intensity of competition decreases. Therefore, the incentives for new implementations, production renewal are reduced. Reproduction takes place on a predominantly extensive basis. This development continues until the growth rate of production begins to outpace the growth rate of effective demand. When this happens, there is overproduction of goods which leads to an economic crisis. The economic crisis reveals the accumulation of surplus capital which takes three forms: overproduction of marketable capital (growth of unsold products), excess of productive capital (increased under-utilization, rising unemployment), excess of money capital (increase in the amount of money not invested in production). The general result of capital accumulation is an increase in production costs, falling prices and, consequently, profits. But the economic crisis is not only the limit, but also the impulse for economic development, performing a stimulating ("cleansing") function.

The economic crisis leads to the depreciation of the means of production unable to ensure the profitable functioning of capital. It also creates incentives for capital renewal on a new technical basis. Therefore, the crisis gives rise to a predominantly intensive economic development. With it, the previous period of development comes to an end and the following period begins. The crisis is the most important element of the mechanism of market economy self-regulation.

But the transition to the expansion of production and its renewal cannot happen at one time. Therefore, the crisis is replaced by a phase of depression. The crisis creates the conditions for economic intensification. During depression, these conditions are consolidated and a period of intensive development begins, which covers the entire next phase – revival. At the end of the recovery phase, the incentives to recover are exhausted. And in the next phase of the cycle extensive development begins again.

Thus, the reason for the cyclical nature of economic development lies in the conflict of production conditions and sales conditions, in the contradiction between production, which seeks to expand, and not keeping up with the growth of effective demand. Significant changes in aggregate supply and aggregate demand are manifested in the economic crisis, which is not only a violation of the proportionality of social production, but also a boost to the balance and equilibrium in the economy. The mechanism of cyclical movement is falling prices (and respectively, depreciation of fixed capital and lower salary).

The duration and depth of the economic crisis is significantly affected by investment fluctuations. The crisis is the starting point for new mass investments. This is due to the fact that, firstly, the crisis devalues fixed capital and thus creates conditions for restoration of the production apparatus.

Secondly, the crisis forces the restoration of fixed capital on a new technical basis, which causes a reduction in production costs and the restoration of pre-crisis levels of profits. The massive depreciation of fixed capital caused by the crisis forces all entrepreneurs to use new technology. Thus, the crisis clears the way for mass investment, helping the economy to move to another phase. Therefore, the renewal of fixed capital is the material basis of the periodicity of crises and the duration of the cycle.

Thus, throughout the economic cycle, the dynamics of production is inextricably linked with the movement of fixed capital and occurs on the basis of this movement. The crisis completes the period of turnover of most individual capitals and at the same time gives rise to a new cycle of turnover. This creates a new material and technical base for the next economic cycle.

The economic cycle model. The defining role of uneven investment in the intensity of cyclical fluctuations is the basis for building a model of the economic cycle. Representatives of the neo-Keynesian direction of economic thought P. Samuelson, A. Hansen, J. Hicks believed that cyclical fluctuations are more influenced by investment and to a lesser extent by consumption.

The economic cycle is seen by neo-Keynesians as a deviation from the state of dynamic equilibrium, characterized by a steady even growth rate of national income (with the constant accumulation and implementation of state policy of economic stabilization).

The neo-Keynesian model of the economic cycle (for example, the Samuelson – Hicks model) is based on the combination of the concept of multiplier and accelerator. According to the concept of the Keynesian multiplier, the relationship between investment growth and national income is a constant value, which is determined by the stability of the share of consumption in the growth of national income. The concept of the accelerator characterizes the feedback between the increase in national income and the subsequent increase in investment. The accelerator shows how much investment should increase with this increase in national income. The acceleration period is characterized by different conditions as compared with the multiplication period. During this period, the growth of national income will expand production and increase investment, and a decrease in national income will lead to a decrease in investment.

As a result, the economic cycle model shows the interdependence of accumulation and consumption: an increase in investment causes an increase in national income; an increase in national income generates an increase in consumption, and an increase in consumption results in a new increase in investment, etc. And as the growth of consumption gradually slows down, the multiplication and acceleration mechanism starts fading out. This means a turn from the growth of production to its fall, which creates long-term crises and inflation. To avoid economic shocks, it is important to smoothly turn from the growth to the fall of production. Purposeful actions of the state in the sphere of taxation, crediting, money circulation can help to make smooth transition. Based on the theoretical model of the economic cycle, the state countercyclical policy is developed.

In reality, any model cannot fully express the most important patterns of the cycle. However, the value of models increases if they are built on the basis of macroeconomic indicators used in practice.

Governmental influence on economic cycles and crises. Economic cycles and crises do not exist out of connection with objective conditions. Each cycle and crisis reproduces the economic environment in which it develops. This affects primarily the change in the mechanism of the cycle, which now intertwines the cyclical patterns of price shifts (their fall in the crisis phase and growth in the rise phase) with the pricing factors of government regulation (causing price increases).

In modern conditions, large capital adapts to effective demand by reducing production while maintaining high prices. The state, in turn, helps large firms "manage" the crisis in this way. Therefore, modifications of the price mechanism are expressed in reducing the "sensitivity" of prices to the crisis narrowing of market demand and increasing this sensitivity to demand growth. As a result, the cyclical expansion of market demand for goods and services has a greater impact on price movements than the crisis narrowing of markets. Thus, the movement of prices in modern crises reflects the confrontation of two trends: increasing, associated with the activities of large capital and the state, and declining, generated by the cyclical reduction of market capacity. In other words, the mechanism of modern capitalist cycles combines crisis and inflation.

The forms of manifestation of modern cycles and crises are also changing. This is expressed: in the synchronization of cyclical movements in different countries, which limits the possibilities of mitigating crisis processes by expanding exports; in increasing cyclical crises and reducing the duration of the cycle; in the relative reduction of the depth of crises; in the instability of the phases of revival and recovery; in changing the scale and depth of crises.

Modern cyclical reproduction is significantly affected by global economic crises which are characterized by a combination of traditional crisis phenomena (falling production, rising unemployment, chronic underutilization of production capacity) with constant rising prices. Therefore, they are called stagflationary crises (and cycles, respectively). These two processes are intertwined with structural crises (energy, food, raw materials, environmental).

Structural crises are caused by deep disparities between the development of certain areas and industries. Therefore, they are long-term and do not fit into a single economic cycle. The function of structural crises is a temporary solution to the contradictions of the international division of labour. Their emergence is due to the conflict between developed countries and developing countries after the collapse of the colonial system. This was demonstrated in the deep disproportion of world development, when low oil and raw material prices imposed on young developing countries led to a relative shortage of these goods. Establishing sovereignty, disposing of their natural resources has allowed these countries to achieve fairer prices for raw materials and increase export earnings. However, developed countries have managed to reduce the prices of oil and raw materials through the use of cheap substitutes and the transition to resource-saving technologies.

Peculiarities of modern cyclical crises are connected with the crisis of state regulation, which manifests itself in the failure of the countercyclical policy of the state, in the bankruptcy of theories and practices of state influence on cyclical reproduction. There is a discrepancy between the officially proclaimed goals of public policy and the actual results of economic regulation: instead of high and stable economic growth a decline is observed; full employment turns into mass unemployment; "price stability" ends up by chronic inflation; balance of payments transforms into the growth of public debt. As a result, the economic activity of the state has become an additional factor of economic instability.

The crisis of state regulation has forced developed countries to seek a way out of this situation, but not by abandoning state regulation of cyclical production, but by restructuring its forms and methods. The direction of public policy has changed from countercyclical to anti-inflationary.

Adaptation to the new reproductive proportions is carried out in the modern economy primarily by competitive market methods. As a result, the importance of the stimulating function of natural economic crises in economic development is growing.

At the same time, in modern crises, such economic parameters as prices, salary and employment are those means which were earlier used to overcome distortions of reproductive disproportions.

Long waves of economic dynamics. The economic cycle is the main form of market economy development. However, cyclic fluctuations interact with long-term trends (waves) lasting 50 – 60 years, including the downward and upward phases.

The foundations of the theory of long-term fluctuations in the economy, or large cycles of economic conditions, were laid in the early 20th century. The greatest contribution to the development of the theory of long waves was made by the Great Russian economist N. D. Kondratiev, who published a number of works in the 1920s. In them, the scientist systematized the accumulated and processed empirical material, made some generalizations, thus laying the foundations of the theory of long waves.

In short, the essence of the theory of long waves is as follows: the development of the capitalist economy is characterized by a successive alternation of periods of slow and rapid growth, each lasting two to three decades. The main elements of the mechanism that reproduces long-term periodic fluctuations in the economy are the turnover of fixed capital with a long service life, the accumulation of free money capital, scientific and technological progress.

Thus, N. D. Kondratiev for the first time began to consider STP as an internal factor of long-term cyclicality. After processing statistical data on the average level of dynamics of commodity prices, interest on capital, nominal wages, foreign trade, coal mining and consumption, production of iron and lead over 140 years, N. D. Kondratiev identified three major cycles: the first wave from 1790 to 1850, the second one from 1851 to 1890, the third wave which started in 1891 and entered a declining phase in 1920. The concept of large cycles of conjuncture came into scientific use under the name of Kondratiev's cycles (long waves).

Thus, the economic cycle is a cycle of constantly recurring economic activity.

The functioning of a market economy, like any economic system, is not uniform and continuous. Economic growth, from time to time, alternates with the processes of stagnation and decline in production, i.e. a decrease in all economic (business) activity. Such periodic fluctuations indicate the cyclical nature of economic development.

The presence of cyclical fluctuations in the economy can be observed through the analysis of the dynamics of such indicators of business activity as GDP growth, general price level, the level of capacity utilization, etc.

8.3. Employment and unemployment

Indicators of the state of the labour market in accordance with the standards of the International Labour Organization are such categories of the population as employed, unemployed and people outside the labour force.

Employment is a set of socioeconomic relations concerning the provision of the working population with jobs, formation and distribution of labour resources in order to participate in socially useful work and ensure the expanded reproduction of the labour force.

The employed population in Ukraine includes citizens residing in the territory of the state on legal grounds and:

- working by hire (full or part time) in organizations of any form of ownership in Ukraine and abroad;
- providing themselves with work (entrepreneurs, artists, farmers and members of their families involved in production;
- elected or appointed to a paid position in public authorities and public associations;
- serving in the Armed Forces of Ukraine;
- doing vocational training, in-service training, intramural studies at secondary schools and higher educational institutions;
- working citizens of other countries who temporarily stay in Ukraine and perform functions not related to the activities of embassies and missions.

Age limits and socio-demographic composition of the employed population are determined by the system of legislative acts of the country. For Ukraine, this age is 15 – 70 years.

Productive employment is the employment of the population that creates the goods and services necessary for the development of society and gives the employee an income not less than that required to reproduce his physical, intellectual and professional qualities, that is, at least, provides a simple reproduction of labour.

Employment from the social point of view includes such useful activities as, for example, intramural training in educational institutions, service in the army.

The employed population does not include people who perform unpaid community or voluntary work and people who are engaged only in domestic duties.

It is obvious that society seeks to make the most of all resources, including labour, that is, to ensure full employment. **Full employment** means that every able-bodied person who can and wants to work must be provided with work. With full employment, there are enough jobs for those who need paid work. Such employment is associated with extensive economic development.

Intensive development is characterized by **efficient employment**, which involves the efficient use of labour and provides the largest increase in production. The criterion for effective employment is the saving of total social labour, so its quantitative indicator is the productivity of social labour (the ratio of national income to the number of people employed in social production).

In different countries, in different historical periods, **forced employment** was used, under which a person had not only the right but also the obligation to work constantly (during the statutory duration of the working week and continuously during the working age). Now in Ukraine, like in many other countries, no coercion to work is applied, free choice of profession and place of work is provided, i.e. **employment is voluntary.** A person can freely dispose of his ability to work: to carry out any activity that is not prohibited by law, paid or unpaid, to take care of the sick, to raise children, to engage in housekeeping, self-development, etc.

The types of employment are classified according to the following characteristics:

• the nature of activity: work at enterprises, work abroad, performance of state duties, individual labour activity, other;

• social affiliation: workers, employees, managers, entrepreneurs, farmers;

• industry: employed in tangible, intangible production, services, and sectors of the economy;

• the territory: in cities, villages, in separate regions;

• professional qualification;

• sex and age;

• type of ownership.

In each type of employment there are forms of employment, which in turn are classified according to the following characteristics:

• forms of organization of the working time: full and part-time;

• employment status: primary and secondary;

• the stability of labour activities: permanent and temporary;

• forms of work organization: standard and non-standard;

• forms of legal regulation: legal and illegal.

Analysis of types and forms of employment makes it possible to accurately characterize the labour potential of the country, forecast the possibilities of using this potential to create GDP in the country and its regions, develop a justified social policy.

The concept of full employment does not mean that there is no unemployment. Western economists argue that full employment is achieved when the unemployment rate does not exceed its natural level, which is equal to 5 – 6 % of the labour force. The real volume of the national product, which is related to the natural rate of unemployment, is called **the productive potential of the economy**. This is the amount of output that the economy can produce with "full use" of resources.

Unemployment is a socioeconomic phenomenon in which part of the labour force (economically active population) is not engaged in the production of goods and services. In real life, unemployment acts as the excess of labour supply over demand for it.

According to the official social statistics of many developed countries, the unemployed include people who are not employed at the time of the employment survey, who have been trying to find a job for the past four weeks and are registered at the labour exchange. The unemployed include not only those who have been fired for various reasons, but also those who have left their jobs voluntarily and are trying to find a new one.

There are several concepts that justify the causes of unemployment.

One of the first explanations of unemployment is given in the work of T. Malthus "An Essay on the Principle of Population": unemployment occurs due to demographic reasons. They lead to the fact that the population growth rate exceeds the growth rate of production. However, such a theory cannot explain why unemployment occurs in highly developed countries with low birth rates.

Marxism connects unemployment with the process of capital accumulation, in which the need for variable capital (labour) grows more slowly than for fixed capital (machinery, equipment, etc.). In K. Marx's "Capital" it is proved that technical progress causes an increase in the mass and cost of the means of production per worker. This leads to a relative lag in labour demand from the rate of capital accumulation. In addition, Karl Marx suggested another cause of unemployment – the cyclical development of capitalist production. During the crisis and depression in economic development, production volumes are reduced, as a result of which the demand for labour decreases, employers lay off redundant workers. The connection between unemployment and the cyclical nature of economic development is still considered a constant economic trend.

J.-M. Keynes in his work "The General Theory of Employment, Interest and Money" found that the development of the national economy is accompanied by the fact that part of the income is not consumed but converted into savings. Effective consumer and investment demand is needed for them to become investments. If investment incentives are not effective, production declines and unemployment arises.

A. Pigou in his work "The Theory of Unemployment" substantiated the emergence of unemployment by imperfect competition in the market, which leads to higher wages. An entrepreneur hires a skilled worker instead of a few unskilled ones, pays him a higher salary, while benefiting from more productive work. The general reduction of wages, according to A. Pigou, can stimulate employment.

Some Western scholars argue that unemployment demonstrates the economic feasibility of the resource use, just like the degree of capacity utilization shows the feasibility and efficiency of the use of machinery and equipment.

According to the law in Ukraine, the **unemployed** are citizens of the working age who, due to the lack of work, have no earnings or other income and are registered with the state employment service as job seekers, ready and able to start a suitable job.

The following categories of citizens are not recognized as unemployed:

• under the age of 16, except for those who worked and were dismissed due to changes in the organization of production;

• who are looking for a job for the first time and do not have a profession (speciality);

• who refused two offers of suitable work from the moment of their registration in the employment service;

• who are entitled to a pension in accordance with the law.

The sum of the employed (E) and unemployed (U) characterizes the economically active population (L = E + U) or "labour force".

People outside the labour force are the economically inactive population, i.e. they are the part of the population that is not part of the labour force.

Quantitatively, **the unemployment rate** is determined by the formula:

$$\begin{array}{c}\text{The unemployment}\\ \text{rate}\end{array} = \frac{\text{the number of unemployed people} \times 100\,\%}{\text{the number of labour force}} = \frac{U \times 100\,\%}{E + U}.$$

Forms of unemployment can be classified according to various characteristics:

• *depending on the causes* there are three main forms of unemployment: frictional, structural, cyclical.

Frictional unemployment is associated with finding or waiting for a job, for example, voluntary change of job, search for a new job due to dismissal, temporary loss of seasonal work (in construction, agriculture), young people looking for their first job.

Structural unemployment is due to the fact that over time, significant changes in technology affect the structure of overall demand for labour. Demand for some professions is declining or disappearing altogether. Demand for other professions, including new ones, is growing. The labour force reacts very slowly to these changes, its structure does not fully correspond to the new structure of jobs; as a result there is unemployment. In addition, the geographical distribution of jobs is constantly changing.

Cyclical unemployment is associated with economic cycles of economic development. It is caused by a decline in production. When demand for goods and services decreases, employment decreases.

• depending on *the degree of openness*: there is explicit (registered at the labour exchange) and hidden unemployment (related to underemployment);

• depending on *the duration of the job search*: there is short-term, long-term and stagnant unemployment;

• depending on *the unemployment rate*: unemployment may be natural, which always exists in society and cannot be eliminated; optimal for this level of development of society; excess, equal to the excess of actual unemployment compared to the optimal one; actual, showing the state of unemployment in the country at a certain point in time.

The following types of unemployment are sometimes distinguished: voluntary and forced.

Voluntary unemployment occurs when workers do not want to work for the salary offered to them but would start working if the salary was higher.

Forced unemployment occurs when the company's administration reduces the number of workers and the employee does not want to resign.

High unemployment leads to negative economic and social losses. The main loss from unemployment is unmanufactured products. Economists define such a phenomenon as the lag in GNP. This lag is the amount by which actual GNP is less than the potential one. Well-known economist A. Okun discovered the law (which now bears his name): if the actual unemployment rate exceeds the natural level by 1 %, the lag in production is 2.5 – 3 %.

Unemployment (official and hidden), in addition to economic consequences, has social non-economic losses. The unemployed are kept at the expense of those who work, that is, society spends money, and products are not produced. Unemployed people lose their qualifications, self-esteem, family, and sometimes commit suicide. Unemployment pushes people to the shadow economy, criminal action.

8.4. Inflation as a macroeconomic phenomenon

Inflation is a situation in the economy when the amount of money in circulation is greater than the need for it. As a result, depreciation of currency and a significant increase in prices of goods and services is observed which results in the fact that after a while you can buy a smaller amount of goods and services for the same amount of money.

Current inflation is also associated with the general critical state of economic development.

With the increase in money supply, many countries look for a way to stimulate investment and revitalize the economy. As a result, the balance of all economic proportions is disturbed. Therefore, modern inflation is an imbalance of supply and demand.

The causes of inflation are as follows:

• the growth of government spending;

• excessive emission of money;

• the state budget deficit;

• militarization of the economy (increase of the military sector in the general structure of the national economy to the detriment of other industries);

• a significant growth of domestic and foreign debt;

• the imperfection of the tax system;

• crisis phenomena in the financial and credit sphere;

• monopolization of production (the situation in the economy when one or more large producers or sellers have a predominant advantage in the market to produce and sell a certain range of goods);

• increasing the money supply through mass lending;

• reducing the turnover rate of money;

• falling output.

Money emission is the issuance of new money which leads to an increase in the total money supply.

Disinflation is a slowdown in inflation.

Deflation is an increase in the purchasing power of the local currency which manifests itself in a decrease in the price index.

The causes of deflation are as follows:

• increasing value of money;

• reduction in the value of many goods as a result of increasing labour productivity with a constant value of money;

• insufficient amount of money for servicing trade turnover, which is analogous to the artificial increase in the value of money. This is the most common reason now, especially after abandoning the gold standard. This kind of deflation is caused by:

1) reduction of the money supply circulating in the market by the central bank or government in order to reduce inflation. This may be done by an

increase in the discount rate, increase in the required reserves of banks, raising taxes, preventing the growth or freezing of wages, reducing state budget expenditures;

2) a fall in the turnover rate of money due to objective reasons related to the turnover process itself (difficulties in transportation, change of routes, etc.). It should be taken into account that the turnover rate of natural money may fall due to excess funds in the economy – in this case, it is a consequence of changes in prices but not the cause of these changes;

3) refusal of the population to spend their money in anticipation of a further increase in its value (in particular, in the case of a so-called liquidity trap) or in order to accumulate for any purposes, provided that the funds are directly in the disposal of the population (are not placed in accounts with credit institutions).

Nowadays, deflation indicates a downturn in the economy, declining output and rising unemployment. Due to falling prices, economic agents can reduce investment in order to invest more profitably after a while (it is cheaper to buy resources as a result of lower prices).

The essence of **demand inflation** is sometimes explained in one sentence: "Too much money is hunting for too few goods."

The main sources of **inflation costs** are an increase in prices of raw materials, fuel, growth in nominal wages and indirect taxes. That is, during inflation, supply prices increase, and production falls.

Moderate inflation is not too fast rate of price increase (up to 10 % per year);

Galloping inflation means an annual increase in prices from 10 % up to 200 %;

Hyperinflation is characterized by a rate of increase in prices that exceeds 200 % per annum.

Open inflation is manifested in the long rise in prices.

Hidden inflation is manifested in increasing deficit goods and services.

Balanced inflation is inflation, at which prices of different commodity groups relative to each other do not change. Prices are rising quite slowly at the same time for most goods.

Unbalanced inflation is inflation, at which the ratio of prices in different product groups varies in varying degrees for each type of product.

Inflation is measured by the **consumer price index**, which is calculated relative to the base period. The rate of inflation is determined as the rate of inflation minus a change in the general price level, expressed as a percentage.

The cost-of-living index is used to adjust the prices of a fixed "market basket" of consumer goods:

To measure the overall level of prices the index of domestic product – the **GDP deflator** – is used. The "basket" of this indicator contains all the final goods and services produced in society.

There is another method for quantifying the measure of inflation. This method is called **"the rule of 70"**. With this approach, you can determine the approximate number of years required to double inflation.

Economic and social consequences of inflation are as follows*:*

• inflation destroys normal relations: money loses its purchasing power, prices do not fulfil their informational role, so investment is unprofitable;

• there is a redistribution of income between the private sector and the state;

• production and exchange stops, and social, political and economic chaos ensues;

• financial collapse;

• depression and socio-political riots.

Capital flows from the sphere of production to the sphere of circulation, primarily to speculative commercial structures, where they quickly rotate and bring huge profits, as well as move abroad in search of greater and guaranteed profits. Speculation, shadow economy and corruption are growing.

The normal functioning of the monetary system is disrupted. The devaluation of money undermines incentives to accumulate it, creating a phenomenon such as "escape from money", when entrepreneurs and individuals prefer to invest money in goods, real estate and other tangible assets. Loan agreements are terminated because it is unprofitable to provide long-term loans at low interest rates during inflation, as the lender will have to receive debts in devalued money.

The negative socioeconomic consequences of inflation include, first of all, the inflation tax, which is not approved by law, but it is mandatory for all.

Inflation tax is:

• income received by the state as a result of the issuance of additional money;

• costs incurred by the owners of money as a result of the reduced real value of cash balances;

• a regressive tax, so that some poor people pay a larger share of their income as an inflationary tax;

• a means of taxation in a number of developing countries in conditions where it is difficult to obtain taxes from other sources.

Inflation losses of the population depend on whether they are anticipated or not and on the scheme according to which the expectations of economic entities are formed.

There are two types of inflation: anticipated (expected) and unanticipated (unexpected) inflation.

Anticipated inflation is taken into account in people's expectations before it appears, so the population is somewhat prepared for it. So, for example, if economic entities expect annual inflation of 10 %, they adjust their nominal income in the following way:

1) employment contracts will provide for an increase in wages;

2) rent will be increased;

3) during banking operations, the nominal interest rate will increase by 10 % compared to the real one.

In case of expected inflation, nominal income can be adjusted taking into account the equation of I. Fisher:

$$I = R + \pi e,$$

where πe is the level of expected inflation;

I is the nominal interest rate;

R is the real interest rate.

However, while the impact of expected inflation can be eliminated in contracts and agreements, there are public costs of expected inflation that do not depend on the behaviour of economic entities and they are not selective in nature but they are related to the functioning of the national economy, so they are incurred by society as a whole. These costs are manifested:

• in the "costs of trampled shoes" (inflation costs due to a declining stock of real money, the need to use more and more banknotes, which leads to more frequent visits to the bank);

• in "menu costs" (seller costs associated with price changes. In conditions of price instability, the seller often has to change price tags, correct the "menu", which generates additional costs for paper, printing costs, costs associated with the preparation of calculations);

• in reducing economic efficiency, as distortions are introduced into price signals. If low inflation makes it possible to estimate changes in relative prices and changes in the general price level, then high inflation complicates such an assessment;

• in violation of the taxation principles. As nominal wages and nominal income increase, the tax burden of the population increases: the income tax rate increases and, with a progressive tax scale, the transition to a higher category of taxation is automatic. In addition, income tax on nominal income from capital gains (shares and other securities) is growing.

The Oliver – Tanzi effect. Inflation affects the real size of the tax burden due to the presence of temporary lags in tax collection. Tax liabilities are usually accrued at some point, and payment is made later, and tax revenues have time to depreciate, reducing the tax burden. In economic theory this phenomenon is referred to as the Oliver – Tanzi effect. The government is trying to avoid this effect through an increase in the frequency of advance payment of taxes and other measures.

The main consequences of unpredictable (unexpected) inflation are:

• redistribution of income and wealth between different groups of the population: from creditors to debtors, as the debt is returned with cheaper money, and the debtor receives an unforeseen gain. The gain is especially big if the borrowed money is invested in real capital, for example, in real estate, gas field. Governments that have accumulated large public debt will repay it with devalued money;

• reduction of real incomes of the population, especially social groups with fixed incomes (pensioners, students, public sector employees);

• depreciation of household savings held by banks.

Social consequences of inflation. Firstly, inflation lowers the living standards of all segments of the population, especially those with a steady income, as income growth lags behind the growth of prices for goods and services.

Secondly, inflation depreciates the population's previous cash savings in banks, insurance policies, annual rents, and other fixed-value assets.

Thirdly, inflation increases unemployment, undermines motivation for effective work, increases social differentiation and social tension in society.

Inflation, especially galloping, and hyperinflation affect, first of all, groups of the population with fixed incomes (state employees, pensioners, students), while private firms that have the ability to regulate wages and raise prices benefit: borrowers who can repay their debts in devalued money; monopolies. These losses and acquisitions can be presented in tabular form.

Those who lose during inflation are:

1. Citizens who have a fixed income. In the period of inflation, the cost of living increases. Therefore, you have to earn more to maintain the same standard of living.

2. In a particularly difficult situation are those who do not have the opportunity to increase their own income, such as pensioners.

3. If in the period during which the money is lent the inflation rate increases, the money returned from the debt will cost less than before.

4. Some citizens invest their money in term accounts or securities that guarantee a fixed level of income from them.

As long as the income level is lower than the inflation rate, the purchasing power of the invested money will decrease.

For entrepreneurs, inflation makes it difficult to plan business processes and pricing.

Those who benefit from inflation are:

1. Monopolies. The presence of gaps in the regulation of monopolies allows them not only to unjustifiably inflate prices, but also to reduce production in order to further increase prices and maintain them at a high level.

2. Borrowers. Despite the fact that inflation devalues the income and savings of citizens, for credit debtors it can be a very positive phenomenon. That is, it turns out that you borrowed "expensive" money from a bank, and give "cheap". In other words, everything around is getting more expensive, and you pay as much on the loan as you paid before the crisis. Your creditor is the loser from such events.

3. The state – as a borrower – when repaying public debt wins during inflation, because it pays on the loan with cheaper money.

4. Owners of real estate, foreign currency, etc. benefit from inflation, because with inflation, the national currency becomes cheaper and foreign currency becomes more expensive. Since real estate is mainly sold in foreign currency (USD), therefore, it increases its value in national currency (UAH).

Thus, inflation devalues real incomes and savings of the majority of the population, thereby widening the gap between the rich and the poor, causes social tension in the country; so inflation is similar to the worst kind of taxes and coercive loans.

Anti-inflation policy of the state. **Anti-inflation policy** is a macro-economic policy aimed at the stabilization of the general level of prices, easing inflation, and achieving a correspondence between the growth rate of the money supply and the growth rate of goods.

Anti-inflation policy includes:

• regulation of aggregate demand;

• regulation of aggregate supply.

The main tools for influencing aggregate demand and aggregate supply are fiscal and monetary policy, control over wages and prices, and indexation.

As the proposed measures are difficult for the population to tolerate, anti-inflationary policy should take effect in a relatively short time.

Another method of anti-inflation policy is **the method of gradual reduction of the inflation rate**. This method involves gradual slowing down of the money supply growth through multiple but not significant reductions.

However, the policy of gradual reduction of the money supply growth rate often generates inflationary inertia – the past inflation generates the future one, which is caused by the indexation of money income.

Indexation is a mechanism by which wages can be partially or completely protected from rising general price levels. It is believed that the policy of gradual reduction of inflation is successful in the case when the growth of money supply and price levels is not higher than 20 – 30 % per year.

The choice of the method of shock therapy and the method of gradual decrease in the growth rate of money supply depends on the socioeconomic situation in the country. Both of these concepts were proposed to be used during the transition of post-Soviet states to a market economy. Another option to combat inflation is a policy of price and income regulation. This approach is recommended due to the fact that reducing inflation by increasing unemployment requires huge costs, which are determined by the so-called loss ratio. It shows what percentage of real annual output needs to be "brought as a gift" to reduce inflation by one percentage point. These losses are expressed in declining living standards, so the state must estimate the magnitude of expected losses due to high inflation. The policy of regulation of prices and incomes means that the government either freezes prices and nominal incomes, or limits the growth of wages to an increase in average labour productivity (in the country), and growing prices limit the increase of wage costs.

However, this policy has not been justified, so it is not used by most market economies.

In the 70 – 80s of the 20th century there was such a method of combating recession and inflation in the economy as direct stimulation of production and offers of goods. The main way of such incentives is fiscal policy, i.e. reduction of tax rates for entrepreneurs will increase their investment opportunities, and lowering payroll taxes will increase incentives to work and raise productivity.

The means for struggling with inflation processes in the economy are:

• changing the structure of taxes;
• reducing the share of direct taxes;
• increasing the share of indirect taxes;
• rejecting progressive tax rates;
• reducing state budget expenditures.

The choice of specific measures to struggle with inflation is determined by the nature of inflation, which has specific features and extent for each country. Depending on the nature of inflation, a set of measures to combat it is determined. Thus, the cause of inflation may be excessive demand (demand inflation) or outpacing growth of wages and prices for materials and components (cost inflation), low national currency, etc., which leads to a set of measures to curb inflation.

Glossary

Economic growth is an increase in output compared to the previous year, an increase in its real value.

The extensive type of growth is conditioned by increased amount of resources involved in the production process.

The intensive growth type is provided through more efficient use of resources based on scientific and technological progress and the best forms of organization of production.

The factors of economic growth are: quantity and quality of labour resources, efficiency of fixed capital, quantity and quality of natural resources, management efficiency, technology efficiency, geographical location.

Innovative development is based on continuous search and use of new ways and spheres of realization of economic potential.

Economic (business) cycle is a fluctuation of the general level of business activity in a country in the form of alternating periods of ups and downs, usually of different duration and level.

Crisis is a phase of the economic cycle that occurs due to falling aggregate demand and is accompanied by a reduction in production.

Depression is a phase of the economic cycle that occurs after the end of the phase of decline and creates conditions for revival of production.

The revival phase of the economic cycle occurs after the end of the depression phase and creates conditions for increased production.

A rise is the phase of the economic cycle, which occurs after the end of the recovery phase and demonstrates the increase in production compared to the previous cycle.

Employment is a set of socioeconomic relations between people concerning the provision of the working population with jobs, formation and distribution of labour resources for their participation in socially useful work and ensuring the expanded reproduction of the labour force.

Productive employment is the employment of the population that creates the goods and services necessary for the development of society and gives the employee an income not less than that required to reproduce his physical, intellectual and professional qualities, that is, at least, provides a simple reproduction of labour.

Unemployment is a socioeconomic phenomenon in which part of the labour force (economically active population) is not engaged in the production of goods and services. In real life, unemployment manifests itself as an excess of labour supply over demand for it.

Frictional unemployment is associated with looking or waiting for a job, for example, voluntary change of job, search for a new job due to dismissal, temporary loss of seasonal work (in construction, agriculture), young people looking for their first job.

Structural unemployment is unemployment that occurs due to the fact that over time, significant changes in technology affect the structure of overall demand for labour.

Cyclical unemployment is associated with economic cycles of economic development. It is caused by a decline in production; when demand for goods and services decreases, employment also decreases.

Voluntary unemployment occurs when workers do not want to work for the salary offered to them, but would start working if the salary was higher.

Forced unemployment occurs when the company's administration reduces the number of workers and the employee does not want to resign.

Inflation is a situation in the economy when the amount of money in circulation is greater than the need for it.

Money emission is the issuance of new money which leads to an increase in the total money supply.

Disinflation is a slowdown in inflation.

Deflation is an increase in the purchasing power of the local currency, which is manifested in a decrease in the price index.

Anti-inflation policy is a macroeconomic policy aimed at the stabilization of the general price level, easing of inflation, achieving a correspondence between the growth rate of money supply and the rate of growth of goods and services.

Tasks for self-assessment

Questions for self-assessment

1. What is economic growth?
2. What two groups of factors of economic growth are there?
3. Name extensive and intensive factors of economic growth.
4. What determines the productivity?
5. Can the state play a significant role in economic growth?
6. Define the economic cycle.
7. What is a cycle?
8. Describe the main factors of the economic cycle.
9. Name the types of economic cycles.
10. What is the organic integrity of the four-phase cycle?
11. Define employment.
12. What grounds are the types of employment classified on?
13. Name the forms of employment.
14. Compare the main theories of unemployment based on the causes of occurrence.
15. Who has the status of the unemployed in Ukraine?
16. How is the unemployment rate determined?

17. Analyze each form of unemployment, give examples.

18. Which of the forms of unemployment has the most negative consequences and why?

19. What is the difference between active and passive employment policy of the state? Give examples of each policy.

20. What are the directions of state employment programs in Ukraine?

21. What is inflation?

22. How is the rate of inflation determined?

23. What are the main causes of inflation?

24. What is the GDP deflator used for?

25. What are the social consequences of inflation?

26. What is balanced inflation?

27. What is the poverty index used for?

28. What types of inflation exist in terms of price growth?

29. What is the method of shock therapy?

30. What method can be used to determine the approximate number of years required to double inflation?

Tests

Choose the correct answer(s).

1. Extensive factors of economic growth include:

a) growing productivity;

b) improvements in the organization of production;

c) an increase in the number of employees engaged in production;

d) all answers are incorrect.

2. Intensive factors of economic growth include:

a) qualitative improvement of production capacity, reduction of time for production of a unit of production;

b) an increase in the time worked;

c) use of the achievements of STP in production;

d) all answers are incorrect.

3. Productivity can be measured as:

a) the cost of production per employee;

b) the cost of production per unit of the time worked;

c) the cost of production per unit of the salary fund;

d) all answers are correct.

4. The cyclical nature of economic development is characteristic of:

a) the market economy;

b) the traditional economy;

c) the command-administrative economy.

5. Find 3 terms that do not describe the concept of the economic cycle.

a) rise;

b) decline;

c) peak;

d) profit;

e) costs;

f) crisis;

g) credit.

6. One of the external (exogenous) causes of cyclical development is:

a) monetary policy of the government;

b) a change in the ratio of aggregate supply and aggregate demand;

c) sunspots;

d) depression.

7. The duration of the economic cycle is:

a) one year;

b) five years;

c) ten years;

d) it is impossible to give an unambiguous answer.

8. The internal causes of cyclical economy do not refer to:

a) economic policy of the government;

b) ecological catastrophe;

c) depreciation of physical capital;

d) fluctuations in personal consumption.

9. Which of these phenomena does not correspond to the period of economic decline?

a) reduction of investment in equipment with long service life;

b) falling stock prices, lower demand for labour;

c) reduction of tax revenues;

d) reduction of unemployment benefits.

10. The state has the opportunity to:

a) postpone the crisis;

b) mitigate its effects;

c) eliminate the crisis;

d) take measures to support socially vulnerable groups.

11. Choose the wrong statement. Countercyclical regulation of the economy aims:

a) to reduce the crisis decline in production;

b) to accelerate economic growth;

c) to stabilize economic development.

12. The source of supply inflation is:

a) increasing consumption expenditures;

b) increasing investment expenditures;

c) increasing costs per unit of output;

d) increasing total expenditures.

13. The main factors that cause cost inflation are:

a) outpacing growth of exports compared to imports;

b) increasing food taxes;

c) reducing resource productivity;

d) outpacing growth of aggregate demand.

14. The main factors that cause demand inflation are:

a) outpacing growth of income;

b) rising resource prices;

c) emission financing of the budget deficit;

d) growth of the national currency rate.

15. The main stream of macroeconomics among the main causes of inflation does not highlight:

a) the growth of the money supply at a higher rate is comparable to the growth of the national product;

b) militarization of the economy;

c) monopolies and unjustified privileges;

d) the issuance of paper money in excess of the amount of gold required for normal trade.

16. Hyperinflation begins when:

a) people and companies spend too much money;

b) firms set higher prices for their goods and services;

c) governments are forced to print money to finance their expenditures;

d) state budget deficits are reduced.

17. Which statement is not correct?

a) inflation reduces incentives to work;

b) hyperinflation has a devastating effect on the volume of national production and employment;

c) moderate inflation is accompanied by an increase in national production;

d) in the 80 – 90s of 20th century deflation was observed in many countries.

18. The causes of inflation according to monetarist theory are:

a) excessive production;

b) excessive speed of money circulation;

c) excessive amount of money in circulation;

d) excessive aggregate demand.

19. The Phillips curve in the short run shows:

a) the inverse relationship between unemployment and inflation;

b) the direct relationship between unemployment and inflation;

c) lack of dependence between unemployment and inflation;

d) all answers are correct.

20. The causes of inflation according to Keynesian theory are:

a) excessive amount of money in circulation;

b) excessive aggregate demand;

c) excessive speed of money circulation;

d) excessive aggregate supply.

21. Unexpected unbalanced inflation is accompanied by:

a) redistribution of income between debtors and creditors;

b) reduction of the real value of savings;

c) falling efficiency of the national economy;

d) all answers are incorrect.

Examples of problem solving

Task 1. In 2010, the national income in the country was 5,000 USD, and in 2020 it was 200 USD more. Determine the rate of economic growth in the country.

Example of doing Task 1

The growth rate is determined by the formula:

$$n = \frac{Y_t}{Y_{t-1}}.$$

Substitute the values into the formula and get:

$$n = \frac{(5000 + 200)}{5000} = 1.04.$$

Answer: 1.04.

Task 2. The production function of the country's economy is determined by the formula:

$$Y = A \times K^{0.4} \times N^{0.6},$$

where A is overall productivity of production factors.

Determine the growth rate of the economy if capital increases by 3 %, the number of employees grows by 2 %, and total productivity factors rise by 1.5 % per year.

Example of doing Task 2

Economic growth rates are determined by the formula:

n = Total productivity of production factors + (Capital growth rate × × Share of capital in GNP) + (Rate of increase in the number of working places × Labour share in GNP).

Substitute the values:

n = 1.5 % + 3 % × 0.4 + 2 % × 0.6 = 3.9 %.

Answer: the economy has grown by 3.9 %.

Task 3. Determine the percentage the number of working places (employed) in the economy should increase by to ensure GDP growth if capital has grown by 10 %, the total productivity factor has risen by 1.6 %, and the production function is written by the formula:

$$Y = A \times K^{0.3} \times N^{0.7},$$

where A is the total productivity of production factors.

Example of doing Task 3

To determine the growth of the working places, apply the formula:

n = Total productivity of production factors + (Capital growth rate × × Share of capital in GNP) + (Rate of increase in the number of working places × Labour share in GNP).

Substitute the values:

$$6\ \% = 1.6\ \% + 10\ \% \times 0.3 + x \times 0.7,$$

where x is the rate of employment growth.

$$0.7x = 1.4, \text{ accordingly } x = 2\ \%.$$

Answer: the number of working places should increase by 2 %.

Task 4. The country's real GDP was 1,600 monetary units in 2018 and 1,840 monetary units in 2019. Determine the GDP growth rate and the growth rate of the economy.

Example of doing Task 4

Economic growth rates are determined by dividing the real GDP in 2019 by the GDP in 2018 as a percentage:

1840 : 1600 × 100 % = 115 %, i.e. real GDP in 2019 was 115 % as compared to the level of 2018.

Economic growth rates are determined by the formula:

$(GDP_{2019} - GDP_{2018}) : GDP_{2018} \times 100\ \%$.

Substitute the values: (1840 − 1600) : 1600 × 100 % = 15 %.

Answer: the economic growth rate was 115 %; the GDP growth rate was 15 %.

Task 5. Calculate the actual unemployment rate under the following conditions: population is 80 million people, the number of people of the working age is 68 million, the number of the employed is 60 million people, people working part-time make 8 million.

Example of doing Task 5

1. Calculate the actual unemployment rate by the formula:

$$AR = \frac{U}{N_{em}} \times 100\ \%,$$

where AR is the actual unemployment rate;

U is unemployment;

N_{em} is the number of people employed in the economy.

Thus, the number of the unemployed will be equal to: $U = N_{pop} - N_{em}$.

2. Calculate the number of the unemployed:

U = 80 − 60 = 20 (million people).

3. Calculate the actual unemployment rate:

$$AR = \frac{20}{68} \times 100\ \% = 30\ \%.$$

Thus, the actual unemployment rate under such conditions is 30 %.

Task 6. Calculate the inflation rate in the current year of country B under the following conditions: in the previous year, the nominal GDP amounted to 283 billion UAH, real GDP was 246 billion UAH. In the current year it is expected to receive a nominal GDP of 190 billion UAH with a GDP price index of 132 %.

Example of doing Task 6

The previous year's GDP price index was:

$$I_P = \frac{GDP_n}{GDD_r} \times 100 = \frac{283}{246} \times 100\ \% = 115\ \%.$$

Thus, this year, the inflation rate will be:

$$\pi = \frac{I_{P_t} - I_{P_{t-1}}}{I_{P_{t-1}}} \times 100\ \% = \frac{132 - 115}{115} \times 100\ \% = 14.78\ \%$$

Task 7. Calculate the inflation rate in 2020 if in 2019, the consumer price index was 113.6, and in 2015 it was 118.3.

Example of doing Task 7

The inflation rate for 2020 is calculated as follows:

Inflation rate = (118.3 − 113.6): 118.3 × 100 = 4.1 %.

Problems for independent solution

Task 1. Over 2 years, GDP increased from 2000 to 2300 million USD. The population has changed from 50 to 60 million. Identify changes in GDP and welfare.

Task 2. Calculate the actual unemployment rate and cyclical unemployment under the following conditions: the population of the country is 105 million people, the labour force (people of the working age) is 80 million people, the number of employed is 72 million people, natural unemployment is 4 %, part-time working people make 10 million.

Task 3. The actual unemployment rate is 9 %. The natural unemployment rate is 6 %. Calculate the underproduced GDP.

Task 4. Unemployment in country A is 0.5 million people. Working population is 38 million people. Calculate the actual unemployment rate.

Task 5. Calculate the actual unemployment rate under the following conditions: the population of the country is 105 million people, the number of the labour force (people of the working age) is 80 million people, the number of employed people is 72 million people.

Task 6. Unemployment in country A is 0.5 million people. Working population is 38 million people. Calculate the actual unemployment rate.

Task 7. You have provided a loan for a year, intending to get a real 8 % per annum and expecting an inflation rate of 60 %. But, in fact, the inflation rate was 70 %. What real income did you receive? What are your losses?

Task 8. You took a loan for a year at an interest rate of 50 % and an expected inflation rate of 40 %, but in reality the inflation rate was 55 %. What was the value of your income?

Task 9. The equation of the Phillips curve is represented as follows:

$\pi = \pi e - \beta\ (u - u^*)$, where π is the actual inflation rate; πe is the level of expected inflation; β is the empirical coefficient that determines the angle of the Phillips curve; u is the actual unemployment rate; u^* is the natural rate of unemployment; $u^* = 4$ %; $\beta = 0.3$; $\pi e = 7$ %. To fight inflation, the government has decided to reduce aggregate demand by cutting government procurement. This led to an increase in the unemployment rate to 10 %. Determine what the inflation rate was.

Task 10. The following conditions are given: inflation is 8 %, the sensitivity of inflation to changes in the level of cyclical unemployment is 0.5; the natural rate of unemployment is 6 %; the actual unemployment rate is 10 %, the expected inflation rate is 5 %. Calculate the rate of inflation caused by the negative perturbation of aggregate supply.

Task 11. Calculate the inflation rate in the current period under the following conditions: the price index in the previous period was 120 %; the price index in the current period is 140 %.

Essay topics

1. The model of economic growth.
2. STP and the modern industrial revolution.
3. Causes and features of cyclical development in market conditions.
4. Problems of economic growth in different groups of countries and Ukraine.
5. The essence, the causes and the types of inflation.
6. Economic and social consequences of inflation.
7. Anti-inflation policy of the state.

References: [1; 2; 6 – 11; 13; 14].

9. The state budget and the tax system

The purpose of studying the theme is to develop the following students' **competences:** the ability to analyze the mechanism of formation of the state budget; the ability to analyze the problems of balancing budget revenues and expenditures; skills and abilities to use fiscal policy.

Questions to study

9.1. The state budget: revenues and expenditures.

9.2. The tax system.

Keywords: taxes, state, state budget, deficit, surplus, budget revenues, budget expenditures, budget deficit, public debt.

9.1. The state budget: revenues and expenditures

The state budget is a plan for the formation and use of financial resources to ensure the tasks and functions performed by public authorities during the budget period.

The budget in its modern sense is a system of economic (monetary) relations, the emergence and implementation of which are associated with the formation, distribution and use of centralized funds of public financial resources. To perform its functions, the state needs a financial base, that is, centralized government revenues. At the same time, there is a need to compile estimates and accounts that would show the amount and movement of revenues collected and expenditures in cash. Such estimates, in fact, were the predecessors of the budget, showing how it was initially prepared. Thus, the budget is a kind of "attribute" of the state in monetary form. The emergence and existence of the budget is impossible outside the state.

The essence of the budget, as well as any economic category, appears in its functions. **The main purpose of the budget** is to regulate the distribution and redistribution of gross domestic product between industries, regions, social groups.

The budget is drawn up according to the budget classification. **Budget classification** is a single systematized aggregation of revenues, expenditures and budget financing on the basis of economic substance, functional activity, organizational structure and other features according to the Ukrainian legislation and international standards.

In terms of substantive content, the budget is the central monetary fund of the state. **State budget volume** is the annual amount of funds that goes through this fund. The budget is in constant motion: funds are not accumulated in it, but are used to finance expenses as they become available. In terms of its scale and mobility, the state budget cannot be measured up to any centralized or decentralized monetary fund, because it concentrates about half of the country's GDP.

The essence of the state budget as an economic category is realized through **distribution and control functions.** With the help of the distribution function, the state organizes the distribution and redistribution of GDP and national wealth in the interests of all members of society and subjects of social reproduction. The state, as the owner of the means of production, on the one hand, is entitled to a certain share of GDP at the stage of its primary distribution, and on the other hand, it performs public functions (political, economic, social) constitutionally reserved for it, which cannot be fulfilled without the required amount of monetary funds. Therefore, the state organizes redistributive processes with the aim of centralizing a part of GDP in the state budget, which in fact is the society's payment for the state's fulfillment of its functions. The distribution function of the budget is characterized by multiple distributions, manifests itself in all spheres of public relations and is used by the country to regulate economic and social development.

Each budget has its own **sources of income**. The sources of state budget revenues are tax on corporate, organizational and union profit, value-added tax, excise taxes, income from foreign economic activity, individual income tax, etc., according to the standards determined by legislative acts. Local budget revenues are derived from various local taxes and penalties.

The main sources of income include: taxes, natural resource payments (water, land), non-tax revenue (from privatization), income from capital transactions, official transfers, trust funds.

The relationship between tax rates and the amount of tax revenues to the budget is shown by the **Laffer curve** (Fig. 9.1).

The Laffer curve shows the relationship between the tax rate and the government revenue, as well as the tax rate (from 0 to 100 %) at which tax revenues reach their maximum.

According to the Laffer curve, up to a certain maximum level M, a larger value of the tax rate provides a larger amount of tax revenues. However, a subsequent increase in the tax rate will lead to a decrease in production incentives, and the amount of national taxable income will decrease.

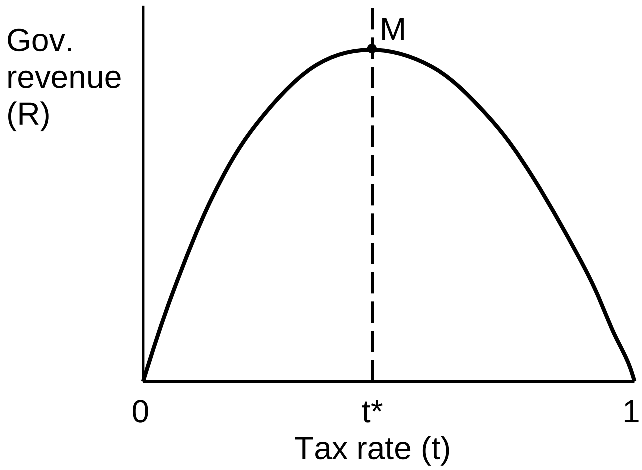

Fig. 9.1. **The Laffer Curve**

Thus, a low tax rate will create incentives for work, savings, investment, innovation, contributing to a significant expansion of national production and income.

Expenditures of budgets of all levels are subdivided into: current – budgetary expenditures used to finance enterprise networks, institutions, organizations operating at the beginning of the financial year, as well as to finance social protection measures; development expenditures – budgetary expenditures aimed at financing investment and innovation activities (capital investments, structural adjustment, etc.).

A significant part of the state budget is spent on national programs for socioeconomic development, etc.

Budgetary expenditures for the needs of the national economy are undertaken in the form of government loans, subsidies, contracts, orders, guarantees.

Depending on the ratio of revenues to expenditures, the state budget can be: balanced – expenditures are equal to revenues; deficit – there is not enough revenues to finance expenses; surplus – the amount of revenues exceeds expenses.

There are three main ways to balance the deficit budget: increased taxes; additional emission of money; government loans – issuance of government securities.

The state budgetary restriction is a conscious restriction of state expenditures due to the extant financial possibilities.

The government policy is aimed at the formation of a surplus budget, since the strength and influence of the state on the economy are determined, first of all, by the accumulation of financial resources in its hands, that is, its stimulating and restrictive influence on economic processes and phenomena.

The main reasons for the budget deficit include: significant growth and irrational structure of budget expenditures; a decrease in production efficiency; ineffectiveness of financial and credit relations; the existence of a significant grey economy; imperfect legislation and tax system, etc.

Currently, among the main problems of the budget deficit, the following are distinguished: structural imbalance of the economy and untimely and ineffective implementation of structural transformations; ineffective tax scheme for economic entities; preservation of a significant number of unprofitable state-owned enterprises receiving subsidies; the structure of budget expenditures that does not comply with the existing financial capabilities of the state; a significant amount of underground economic activity; ineffective diversion of budgetary funds; losses, squandering of products, theft, falsificated data etc., lack of effective state financial control; ineffectiveness of financial and credit relations.

According to the criterion for determining the constituent units of the budget deficit, it is divided into the actual budget deficit, structural budget deficit, and cyclical budget deficit. While the actual deficit is an external manifestation of the imbalance between the revenue and expenditure parts of the budget, the structural and cyclical deficits are its internal components.

The existence of a budget deficit requires a constant search for ways to overcome it and, ideally, to balance budget revenues and expenditures. The particular measures taken by the state in this direction may be different, but as a result they boil down to creation of opportunities for income growth and reduction of budget expenditures.

To this end, it is necessary: to improve the tax system, to ensure the optimal level of tax exemptions for the formation of budgets of all levels and to create favorable conditions for entrepreneurial activity, to attract personal savings of the population to the investment sphere, to provide financial support for small and medium-sized businesses by developing and implementing targeted programs for the development of small and medium-sized businesses, to strengthen the responsibility of business entities and their executives, in particular, personal, property and criminal liability for compliance with the legislative requirements, the timeliness and completeness of reckoning with the budget and state extrabudgetary funds, to reduce the expenditure side of the budget, to abandon budget financing in favour of the system of subsidies, subventions, investment loans to business entities, to improve the regulatory framework of the budgetary process.

Thus, in order to overcome the budget deficit, it is necessary to revise the methodology for determining the deficit and bring it in line with international standards. A correctly defined direction for overcoming the deficit is based on a detailed analysis of the situation in the country's economy. Proceeding from the level of economic development and the potential of the cash economy, it is necessary to find the acceptable size of the budget deficit.

A budget deficit is an excess of budget expenditures over its revenues. If the deficit is temporary and does not exceed 10 % of the amount of income, it is conceivable. The deficit, that exceeds the 20 % level is critical. If budget revenues exceed expenses, a surplus (excess) is formed.

The state budget surplus is the excess of state budget revenues over expenditures.

The budget deficit is an important instrument of the financial policy of the state that affects the economic and social situation of the country. Ill-considered socioeconomic policy, a decline in production, a decline of enterprises are the main causes of the budget deficit whose growth leads to an increase in inflationary processes, a crisis in the area of public finances, the monetary system, the growth of income differentiation and, as a consequence, the deterioration of the socioeconomic state of society. Therefore, the issue of the budget deficit and the improvement of ways to overcome it are particularly relevant.

There are the following **types of budget deficits:**

1. According to the form of manifestation: **open** and **hidden**.

A budget deficit is open if its level for the corresponding year is officially recognized.

A hidden budget deficit arises from overestimation of planned revenues and incorporation of sources of covering the deficit into these revenues.

2. Depending on the reasons of occurrence: **forced** and **deliberate**.

A forced deficit is a deficit, which is a consequence of a reduction in GDP (limitation of the state's financial resources).

A deliberate deficit arises as a response to a discretionary fiscal policy that provides for targeted changes in the size of state expenditure taxes, and the fiscal balance.

3. According to the types of deficit financing: **passive** and **active**.

A budget deficit is passive, when funds are directed to cover current expenses.

A budget deficit is active, when funds are directed to investments in the economy.

Public debt is the total amount of outstanding loans received by the government, at a certain point, to finance the budget deficit and other purposes defined in the legislation, unpaid interest for servicing these loans.

The main condition for the development of the state under market conditions, on an innovative basis is the proper level of financial provision, the criterion of which is financial security.

An important instrument of state regulation of socioeconomic processes is the state budget of the country. It is the imbalance in the state budget that is the main destabilizing factor in the crisis of public finances. The main component of financial security is debt security. The significant role of public debt in the economy of the state is subject to its multilateral influence on all spheres of life, the necessity to calculate its maximum level for the country, taking into account the provision of sustainable economic growth, coordination of fiscal and monetary policies, and the like.

The main reasons for rapid growth of public debt include: the necessity to increase foreign exchange reserves to ensure the stability of the national currency, significant amounts of budget deficits, dependence on energy import, the need for technical reequipment of most sectors of the economy.

The existence of debt creates real and potential problems, although different economists treat them differently. The existence of public debt requires annual interest payments, which must be funded from tax revenues. For rapid growth of such expenses, the state must either reduce spending on the financing of socioeconomic programs, or increase its revenues. The increase in budget revenues is achieved through the establishment of new taxes and other mandatory payments or additional government loans. Additional borrowing requires additional costs to service the public debt. The introduction of new taxes can undermine the interest of entrepreneurs in business.

9.2. The tax system

The tax system is a set of taxes and mandatory payments in the country and the mechanism of collection of taxes.

Taxes are one of the main methods used by the state to redistribute national income.

The essence of taxes as an economic, financial category is that they are mandatory contributions to the budget of the appropriate level or to state trust funds which are carried out by taxpayers in the manner and under the conditions specified in the relevant legislation of Ukraine on taxation.

The emergence and existence of taxes and other tax payments is associated with the emergence and functioning of the state. Any state cannot exist without taxes, so taxes are the initial category that reflects the essential features and properties of public finance. Taxes and payments paid by taxpayers to the budget become the property of the state. They also become the material basis for the financial support of state's socioeconomic and military-political responsibilities.

Nowadays, taxes have two **main functions**: **fiscal** and **regulatory**.

The fiscal function is the main function of taxes. State monetary funds are formed by the collection (payment) of taxes and tax payments established by the government. These funds become a material condition of existence of the state and the implementation of domestic and foreign policy.

Taxes received by the state should not be only sufficient, but also timely in order to finance the corresponding budget expenditures in a timely manner. With the help of the fiscal function of taxes, a part of the national income created in the national economy of the country is nationalized.

The essence of the regulatory function of taxes is that they affect various aspects of the activities of their payers. For example, taxes affect reproduction by stimulating or curbing the rate of its expansion, increasing or decreasing capital accumulation, expanding or reducing the effective demand of the population, and the like. In this regard, the state is able to consciously use taxes to regulate certain proportions in the socioeconomic life of society.

Taxes should provide, on the one hand, a stable financial base of the volume necessary for the state, and on the other, leave as much money as the economic entities need for their own development and raise the material interest of workers and employees in the results of labor.

Types of taxes, their payers, the object of taxation, rate, procedure for calculation and payment are established by the state and local authorities.

The existing system of taxes and tax payments has its own classification, which is based on the following features: form of taxation, the economic content of the object of taxation, the level of state structures, establishing taxes.

Depending on the economic content of the object of taxation, the taxes are divided into: **income taxes** (taxes levied at established rates on the income of individuals and legal entities. These include income tax, personal income tax); **consumption taxes** (taxes imposed on buyers in the form of prices of goods and services. These taxes include value added tax, excise duty, customs duties); **property taxes** (taxes that are levied on specific property of legal entities and individuals. For example, a tax on vehicles and other self-propelled vehicles and mechanisms).

Depending on the level of state structures that establish taxes, they are divided into **state** and **local**.

Depending on the direction of use, taxes are divided into **general** and **targeted** (special).

Depending on the form of taxation, all taxes are divided into **direct** and **indirect**.

Direct taxes are taxes that are imposed directly on payers' income and are paid by them from their own cash receipts. These include: tax on profits, on vehicles, on land, income tax, etc. The larger the object of taxation is, the greater the amount of tax is at the same rate, and vice versa.

Indirect taxes are taxes that are imposed on goods and services and are paid by the buyer in their prices or tariffs, and paid to the budget by sellers of goods and services.

In this case, the buyer pays taxes to the seller in the prices of goods and services that he buys from him, and the seller subsequently transfers them to the state. Here, the connection between the taxpayer (consumer of the goods) and the state is mediated through the object of taxation.

Indirect taxes include value added tax, excise duty, and customs duties.

The totality of the monetary relations of the state with enterprises, organizations, the population, as well as between public authorities for the creation and use of the main centralized fund for public needs, forms the economic content of budgetary relations.

Glossary

The state budget is a plan for the formation and use of financial resources to ensure the tasks and functions carried out by government authorities during the budget period.

The tax system is a set of taxes established in the country, obligatory payments of a tax nature and the mechanism of collection of these taxes.

Taxes are compulsory contributions to the budget of the corresponding level or state trust funds which are made by payers in the manner and under the conditions specified in the relevant legislative acts of Ukraine on taxation.

A budget deficit is an excess of budget expenditures over its revenues.

Public debt is the total amount of outstanding loans received by the government at a certain point to finance the budget deficit and other purposes specified by law, unpaid interest for servicing these loans.

Tasks for self-assessment

Questions for self-assessment

1. What is the budget deficit?
2. What are the main reasons for the budget deficit?
3. What are the main reasons for rapid growth of private debt?
4. What is the essence of taxes?
5. What are the types of taxes?
6. Give a definition of the state budget.
7. What provides about 90 % of state revenues?
8. What are the types of the state budget?
9. Name the types of budget deficits.
10. Name the main means of balancing the budget deficit.

Tests

1. The Laffer curve shows the relationship between:

a) income and expenses;

b) supply and demand;

c) the level of tax rates and budget revenues;

d) parts of total income received by high-income and low-income families.

2. The state regulates the market through:

a) taxation;

b) investments;

c) subsidies;

d) all answers are correct.

3. Which of the above refers to direct methods of state regulation of the economy:

a) monetary methods;

b) fiscal methods;

c) targeted financing of the state;

d) accelerated depreciation?

4. Which of the following taxes are direct:

a) individual income tax;

b) excise taxes;

c) duty;

d) sales tax?

5. The state budget deficit occurs when:

a) government revenues exceed expenses;

b) government expenditures exceed revenues;

c) government revenues are not equal to GDP;

d) state has external debt.

6. The instruments of administrative regulation of the economy do not include:

a) instructions;

b) sanctions;

c) licenses;

d) depreciation rates.

7. The instruments of economic methods of state regulation do not include:

a) tax rates;

b) customs tariffs;

c) quotas;

d) discount rate.

8. The main functions of taxes are:

a) distribution, regulatory and control;

b) fiscal, stimulating and controlling;

c) redistributive, fiscal and monetary;

d) distribution, fiscal, regulatory.

9. The system of organizational and economic forms of management, management methods and legal norms, with the help of which the state complies with the requirements of economic laws, is:

a) the self-regulation mechanism;

b) the economic mechanism;

c) the planning mechanism;

d) an effective mechanism.

10. What is not the function of the economic mechanism:

a) implementation of relations of the dominant type of property;

b) promoting the interaction of productive forces and economic relations;

c) issue of additional funds;

d) coordinating and ensuring the movement of economic interests?

Examples of problem solving

Task 1. Suppose government procurement equals 500, the tax function has the form T = 0.4Y, the transfer function has the form F = 0.2Y, the price level has the form P = 1. Public debt D = 1000 at an interest rate of R = 0.1. The real volume of production is 2000, and the potential is 2500. Determine: a) the fiscal balance; b) the size of the structural deficit of the state budget; c) the magnitude of the cyclical deficit of the state budget.

Example of doing Task 1

a) State budget expenditures: G + F + (D × R) = 500 + 0.2 × 2000 + + 0.1 × 1000 = 1000;

state budget revenues: T = 0.4 × 2000 = 800;

actual state budget deficit = 1000 − 800 = 200.

b) The structural deficit is determined by substituting the potential output instead of the actual one:

500 + 0.2 × 2500 + 0.1 × 1000 − 0.4 × 2500 = 100.

c) Cyclical deficit = actual − structural = 200 − 100 = 100.

Task 2. In the reporting quarter an enterprise shipped sugar in the amount of 36,000 UAH (including VAT); capitalized fuel in the amount of 1800 UAH (including VAT); received a penalty from the supplier for late delivery of goods in the amount of 500 UAH; provided irrevocable financial assistance to a non-profit organization in the amount of 6,000 UAH. The taxable profit in the previous reporting year was 100,000 UAH.

Determine the amount of income tax that the company must pay.

Example of doing Task 2

To solve the task, use the following formula:

$$OP = VD - VR - A,$$

where OP is taxable profit;

VD is gross income;

BP is gross expenses;

A is depreciation;

VD = 30,000 + 500 = 30,500 UAH;

BB = 1,500 + 5,000 = 6,500 UAH;

OP = 30,500 – 6,500 = 24,000 UAH.

Problems for independent solution

Task 1. Identify the direct and indirect taxes: excise, value added tax, tax on securities, duty, inheritance tax, income tax, tax on gold items, corporate tax, building gift tax, land tax. Tabulate the answer.

Task 2. The price of a product is 270 UAH. Find VAT.

Task 3. Last year the actual GDP of a certain country was 3,800 billion euros. For the current year, the government has planned a GDP growth of 4,300 billion euros in order to reach its equilibrium potential value. In recent years, the marginal propensity to consume in the country was 0.78. How much should government spending or taxes be increased to bring the economy into equilibrium?

Task 4. Suppose government purchases are equal to 1,000, the tax function has the form T = 0.3Y, the transfer function has the form F = 0.2Y, the price level is P = 1. Public debt D = 1,500 at an interest rate of R = 0.1. The real volume of production is 3,000, and the potential is equal to 3,500 Determine: a) the balance of the state budget; b) the size of the structural deficit of the state budget; c) the magnitude of the cyclical deficit of the state budget.

Task 5. The price of the product is 5,700 UAH. Find VAT.

Essay topics

1. The current tax system of Ukraine.
2. The role of taxes in the formation of the state budget.
3. Experience of other countries in covering public debt.

References: [2; 7; 9].

10. The regulatory role of the state in a market economy

The purpose of studying the theme is to form the following students' **competences:** the ability to analyze the nature and mechanism of state regulation of the economy, the socioeconomic policy of the state.

Questions to study

10.1. State regulation of the economy: the essence and functions.
10.2. The mechanism of state regulation: the essence and structure.
10.3. Socioeconomic policy of the state.

Keywords: state, state regulation of the economy, socioeconomic development, functions of the state, social policy.

10.1. State regulation of the economy: the essence and functions

State regulation of the economy should be understood as a system of standard methods of legislative, executive and control nature, which are carried out by the relevant state institutions and public organizations in order to stabilize the economy and ensure sustainable development.

The factors that cause the necessity for state regulation of the economy can be divided into four groups.

The first group of factors is related to solving the problems of market development which should include: the necessity to protect the environment; production of public goods; support of competition and market openness; development of unprofitable and low-profit enterprises.

The second group of factors is associated with those that overcome the cyclical nature and contribute to the stability of economic growth. Factors related to solving social problems include: supporting full employment; support for socially vulnerable groups.

The third and fourth groups of factors are related to the country's presence in the world community and concern regulation of the national currency and conducting a policy of protection of the national producer.

In a market economy, the state performs a number of economic functions. First of all, it is the development of economic legislation, support for competition, development of antitrust law, redistribution of income and social guarantees for work, payment of benefits, maintenance of optimal employment, stabilization of the economy in fluctuating economic conditions; regulation of entrepreneurial activity, regulation of money circulation, fight against inflation, etc.

Methods of direct regulation are: state orders, centrally set prices, standards, licenses, regulations.

Methods of indirect regulation presuppose the absence of direct state intervention in the decision-making process by individual enterprises. With the help of certain tools, the state only creates conditions and influences the economic interests of enterprises so that independently made decisions correspond to the goals of the state's economic policy. Thus, the state changes the size of the discount rate, regulates the rate of bank reserves and conducts operations on the open securities market.

The economic mechanism is considered as a set of economic, organizational, legal, moral, political and other means of influencing state, social, industrial relations and production. Thus, the economic mechanism is the mechanism of functioning of the economy organized by the state.

The elements of the economic mechanism are: the economic management system and direct producers – enterprises and associations; forms of production and organization; a system of economic relations, which allows the units to share the results of performance and achieve the ultimate goal of production.

The purpose of the economic mechanism is to perform the following functions: the use of economic laws; resolution of socioeconomic conflicts; realization of property relations; development of needs, interests and incentives. In addition to the main functions, the economic mechanism performs other functions, namely: regulation of scientific and technological progress; environmental protection; rational use of resources. The economic mechanism, like all mechanisms, has its own structure. The elements of the structure of the economic mechanism are as follows: planning; incentives; organization; regulations.

Presently, the state performs three main functions: ensuring production efficiency; ensuring justice; ensuring the stability of economic development.

The function of ensuring the efficiency of production is that the state sets taxes and benefits, regulates money circulation and the credit system, creates conditions for the efficient use of limited resources. Today the state is an entrepreneur, because state-owned enterprises also function in the economy. The state is: an investor making public investments in economic development; seller and buyer purchasing from private enterprises a huge number of products in accordance with the state order and state contracts.

The function of ensuring justice is, first of all, tax policy, which redistributes income in society and provides funds for social programs to help the poor, unemployed and people with disabilities. Influencing the process of labour reproduction, the state provides the state system of education, health care, training and retraining of employees.

The third function of the state is to ensure stability, eliminate excessive stagnation of the economy. The state actively uses modern methods of programming and forecasting the economy to control the depth of the economic crisis and non-cyclical policies, the length of business cycles and crisis.

In economics, there are two approaches to the regulation of processes: the classical theory, in which the market mechanism automatically ensures equality of supply and demand, makes it impossible to reduce long-term disruptions, including production, inflation and unemployment; and the Keynesian theory, which is based on the need for state regulation of the economy.

10.2. The mechanism of state regulation: the essence and structure

The mechanism of state regulation is a set of levers, instruments of state influence on the economy aimed at the achievement of the goals and priorities of state, social and economic policy.

The main tasks of **state regulation of the economy** are: rational use of resources and macroeconomic efficiency (increasing labour productivity in social production on the basis of technical and technological renewal, organization and development of management); ensuring stable development of the national economy; ensuring the competitiveness of domestic products on the world market; realization of goals of social development involving: social justice; effective employment; ecological balance; meeting the socio-cultural and spiritual needs of the population.

The main **functions of state regulation of the economy** are: target-oriented, that is determining the main goals, priorities for economic development of the country; stimulating, that is creating regulatory bodies that can effectively influence the activities (interests) of economic institutions and promoting economic processes in the direction needed by society; normative, that is establishing specific rules of activity for the state, law, legislation, norms and economic activity; corrective, creating progressive processes to improve the allocation of resources in the economy, eliminate the negative effects of external factors and provide socioeconomic conditions for the functioning of society; social, regulating socioeconomic relations; controlling, concerning laws, regulations, economic, environmental and social standards, etc.

The subjects of state regulation of the economy are the state, state institutions that have the appropriate powers, non-state public institutions.

The objects of state regulation of the economy are industries, regions and situations of socioeconomic life of the country, where problems arise automatically or not immediately, as required by the conditions of normal functioning of the economy and maintaining social stability.

The types of state regulation of the economy are: short-term regulation, that is the influence of the state on the economy to achieve results during the year; long-term regulation, that is the influence of the state on the economy over several years. The main methods of long-term regulation are planning, programming, evaluation.

There are the following **tools of state regulation of the economy**: administrative, economic, donor, protectionist.

Administrative methods of state regulation are regulations, licenses, state standards, sanctions, etc. Economic methods of regulation are state planning and programming, fiscal policy, monetary policy, investment policy, foreign economic policy, regulation of prices and incomes. Donor methods are state grants, tax benefits, soft loans. Protectionist methods are protection from external competition; quotas and licenses.

Economic methods of state regulation should be considered in more detail. State planning of economic development of a country is mainly indicative (desirable). Based on long-term economic forecasts, governments develop national programs to achieve the desired macroeconomic indicators. These indicators are benchmarks for the activities of individual producers. The highest form of government intervention in the production process is economic programming. This is a mechanism for reconciling the interests of individual producers and the state.

Fiscal policy is a policy of revenues and expenditures of the state, associated with the use of the tax system, budget system, social assistance system to influence the economic development of the country and, above all, aggregate demand and aggregate supply. Therefore, fiscal policy is also called budget-tax policy.

The next economic method of state regulation is **monetary policy**. The essence of this policy is regulation of the money supply to balance the economy. The leading role in the implementation of monetary policy belongs to the central bank of the country. In Ukraine, the central bank is the National Bank of Ukraine. The main objectives of its activities are: creating conditions for the effective functioning of economic entities; protecting and ensuring the stability of the national currency (UAH); developing and strengthening of the banking system; ensuring effective settlements between economic entities.

The main **instruments of monetary policy** are: purchase and sale of government bonds to legal entities and individuals; regulation of the norms of obligatory reservation of commercial banks; regulation of the interbank interest rate at which the National Bank of Ukraine provides loans to commercial banks; foreign currency transactions; open market operations – changes in the supply and debt capital through the purchase or sale of securities (bonds, certificates, etc.) to legal entities and individuals in the country.

Investment policy is one of the economic methods of state regulation. Investments in the economy significantly affect GDP growth, employment, living standards and quality of life. That is why the state in a market economy affects the investment process.

Foreign economic policy is one of the methods of state regulation. The state carries out a set of measures aimed at the development and regulation of international trade and other relations with states and organizations. The types of foreign economic policy of the state are: protectionism, a state policy aiming to protect the national economy from foreign competition; free trade, a policy of free trade designed to liberalize foreign economic activity, free access to the national market of goods, capital, labour, etc.

10.3. Socioeconomic policy of the state

Economic policy is an interconnected system of long-term and current goals of economic development, defined by the state, a set of relevant government decisions and measures aiming to achieve these goals with the use of state power in the economy.

In the political sense, economic policy is the activity of political entities (state, political parties, movements, etc.) to develop and implement a system of practical measures to influence the economic condition of society. **The sphere** of economic policy is the interaction of the economy and politics. **The subjects** of economic policy are political power, various political structures, non-governmental unions, associations, and the system of lobbying. **The object** of economic policy is the economic system as a whole or its individual parts.

The main objectives of economic policy in a market economic system are: economic growth; effective employment; stable price level; growth of economic efficiency; protection and support of the principles of economic freedom; social security and stability. The structure of economic policy includes structural policy, financial and credit policy, investment policy, social policy, foreign economic policy, scientific and technical policy, tax policy, budget policy.

Social policy is a system of legal, organizational and other measures of state and non-state institutions and organizations that take into account the economic potential of the country and aim to maintain social stability in society, create conditions for increasing the welfare of able-bodied people and ensuring a decent standard of living for those who do not have sufficient funds due to disability or other life circumstances.

The main purpose of social policy is to overcome social tension, achieve balance, stability, integrity, consolidation, harmony and dynamism of society. The objectives of social policy are to ensure the effective development of the social sphere. The income policy pursued by society is an important component of the general socioeconomic policy, as the indicators of income of the population are characteristics of the standard of living and economic characteristics at the same time.

Income of the population is a tool to determine the level of welfare of society. There are monetary and in-kind incomes. Forming monetary income is carried out through wages, payments from social funds (social transfers), entrepreneurial income, property income, personal subsistence farming and individual labour, other income (alimony, fees, charitable assistance, etc.).

Throughout life, everyone is in danger of circumstances that can directly affect their health and lead to loss of income – the main source of livelihood. Such circumstances include illness, old age and disability.

In most cases, a person cannot overcome these circumstances on his own, because they are determined by objective socioeconomic conditions, are closely related to employment and almost do not depend on the will of the person. However, they affect the social stability of society, and therefore the state assumes some responsibility for the occurrence of such circumstances and creates a system of social protection.

The term **"social protection"** has a broad and narrow interpretation. In a broad sense, social protection is seen as an activity of the state aiming to ensure the process of formation and development of a full-fledged personality, to create conditions for self-determination and approval in life. In the narrow sense it is as a set of economic and legal guarantees that ensure the observance of the most important social rights of citizens.

Social security is the provision of social benefits to certain categories of citizens at the expense of budgets. Social benefits are paid to low-income families, families with children, victims of war or political repression.

Social benefits are short-term (one-time or periodic) payments, designed to compensate for lost earnings or additional support in case of social risk at the expense of social insurance funds or the budget. Social benefits may be of insurance and non-insurance nature.

The signs of insurance are: the benefits are realized at the expense of social insurance funds; the right to receive them belongs to insured people; the main purpose of the benefits is compensation for lost earnings (the amount depends on earnings).

The signs of the non-insurance nature are: the right to receive the benefits belongs to uninsured people; funding is effected from the budget; the goal is material support.

Social benefit is a statutory full or partial exemption of certain categories of citizens from duty, or the granting of additional rights in case of social risk.

Social insurance is a system of measures for material security of the population of old age, in case of illness or disability in the working age period, in case of unemployment, support of motherhood and childhood, public health, in case of retirement, etc.

The concept of **social insurance risk** is one of the key concepts in the theory of social insurance. It means the circumstances as a result of which citizens and members of their families may temporarily or permanently lose their livelihood and thus need material support or social services under the mandatory state social insurance.

Social risks in a broad interpretation act as a basis for social protection. The risk that is the object of social insurance can be called socio-economic, because it covers only the economically active population and is associated with the loss of earnings or other means of subsistence due to the inability to participate in the economic process for the following reasons:

1) biological (illness, disability, old age);

2) industrial (occupational injury or occupational disease);

3) economic (unemployment);

4) social nature (birth and upbringing of children).

Social services are a set of legal, economic, psychological, educational, medical, rehabilitation and other activities aimed at certain social groups or individuals who are in difficult life circumstances and need outside help in order to improve or reproduce their vital activity, social adaptation and return to a full life. The forms of social services are material assistance and social services.

Social services are a system of social measures that provide social services to individuals or groups of the population to overcome or mitigate life difficulties, maintain their social status and full life.

Socioeconomic guarantees are the provision of the state to meet the various needs of citizens at the level of socially recognized norms. The sources of funding for social guarantees are:

a) the state budget;

b) funds from local budgets;

c) insurance funds: (Social Insurance Fund for Temporary Disability; Fund of Compulsory State Unemployment Insurance; Insurance Fund for Accidents at Work and Occupational Diseases; Health Insurance Fund; State and Non-State Pension Funds).

Cost of living is the minimum number of livelihoods needed to support the employee's subsistence and restore the workforce. It determines the lower limit of the socially necessary standard of living under certain conditions of society development and is a dynamic socio-economic category. The amounts of state social guarantees for the respective year, which are determined depending on the subsistence level, are established by the relevant laws.

Indexation is a mechanism established by laws and other normative legal acts to increase the monetary income of citizens, which makes it possible to partially or fully reimburse them for rising prices for consumer goods and services.

Glossary

State regulation of the economy is a system of standard methods of legislative, executive and regulatory nature, which are carried out by relevant government agencies and NGOs in order to stabilize the economy and ensure sustainable development.

Fiscal policy is a policy of revenues and expenditures of the state, associated with the use of the tax system, budget system, social assistance system to influence the economic development of the country and, above all, aggregate demand and aggregate supply.

Monetary policy is a set of monetary instruments aimed at the regulation of the money supply to balance the economy.

Social policy is a system of legal, organizational and other measures of state and non-state institutions and organizations that take into account the economic potential of the country and aim to maintain social stability in society, create conditions for increasing the welfare of able-bodied people and ensure a decent standard of living for those who do not have sufficient funds due to disability or other life circumstances.

Cost of living is the minimum number of livelihoods needed to support the employee's subsistence and restore the workforce.

Tasks for self-assessment

Questions for self-assessment

1. What factors cause the necessity for government regulation?
2. What economic functions does the state perform?
3. What are the methods of direct regulation of the economy?
4. What methods of indirect regulation of the economy do you know?
5. What is the socioeconomic policy of the state?
6. What is income?
7. What is social protection? Describe the components of social protection.
8. What is indexation?
9. What types of social protection operate in Ukraine?

Tests

1. The objective basis of state regulation of the economy is:

a) socialization of production in the national economy and internationally;

b) the development of STR, which requires large labour and financial resources that can only provide the state;

c) the inability of the market to solve environmental, social problems and meet the needs of social goods;

d) all answers are correct.

2. The state regulates the market through:

a) taxation;

b) investments;

c) subsidies;

d) all answers are correct.

3. Which of the following refers to the direct methods of state regulation of the economy:

a) credit and monetary methods;

b) budget and tax methods;

c) targeted state funding;

d) accelerated depreciation?

4. Which of the following refers to indirect methods of state regulation of the economy:

a) targeted state funding;

b) public procurement;

c) budget and tax methods;

d) functioning of the public sector of the economy?

5. The administrative methods of state regulation of the economy include:

a) antitrust measures;

b) introduction of mandatory standards;

c) determination of the minimum allowable parameters of life of the population;

d) all answers are correct.

6. The state budget deficit arises when:

a) state revenues exceed expenditures;

b) government expenditures exceed revenues;

c) state revenues are not equal to GDP;

d) the state has an external debt.

7. The state conducts the policy of "cheap money" when the following is observed in the country's economy:

a) growth, because it stimulates GDP growth;

b) crisis and unemployment;

c) a boom, because during this period the economy needs a lot of money;

d) low average salary.

8. Full or partial exemption of certain categories of citizens from the duty provided by law is called:

a) social benefits;

b) social insurance;

c) social risk;

d) social guarantee.

9. The objects of state regulation of the economy do not include:

a) the state;

b) the economic cycle;

c) employment;

d) inflation.

10. Sources of funding for social guarantees are:

a) the state budget;

b) funds from local budgets;

c) insurance funds;

d) personal income.

Examples of problem solving

Task 1. Last year, the country's actual GDP was 3,800 billion EUR. For this year, the government plans to increase GDP to 4,300 billion EUR to reach its equilibrium potential. In recent years, the marginal propensity to consume in the country was 0.8. By how much should public spending be increased for the economy to reach equilibrium?

Example of doing Task 1

The amount by which it is necessary to increase the government spending is determined by the formula of the multiplier of government spending and is:

$$\Delta G = \frac{\Delta Y}{m_g} = \frac{4300 - 3800}{1/(1 - 0.8)} = \frac{500}{5} = 100 \text{ bln EUR}.$$

Task 2. In 2016, the cash ratio (cr) was 10 %, the actual cash reserve ratio (rr) was 30 %, and the monetary base was 200 million USD. In 2018, the money deposit rate was 20 %, the actual cash reserve ratio did not change, and the monetary base increased by 50 million USD. If the money supply is governed by the mechanism of the money multiplier, how has it changed during this period?

Example of doing Task 2

In 2016, the multiplier was: (cr + 1) / (cr + rr) = (0.1 + 1) / (0.1 + 0.3) = = 2.75. Money supply = 200 × 2.75 = 550.

In 2018, the multiplier was: (cr + 1) / (cr + rr) = (0.2 + 1) / (0.2 + 0.3) = 2.4.

Money supply = 250 × 2.4 = 600, thus it increased by 9.1 %.

Problems for independent solution

Task 1. In 2018, the cash ratio was 10 %, the actual cash reserve ratio was 25 %, and the monetary base was 300 million USD. In 2019, the cash ratio was 30 %, the actual cash reserve ratio did not change, and the monetary base increased by 100 million USD. If the money supply is governed by the mechanism of the money multiplier, how has it changed during this period?

Task 2. According to many economists, government regulation is necessary primarily in such areas as maintaining a competitive environment, ensuring economic stability, social security and balance, overcoming crises at the macro level. What areas of state regulation of Ukraine's economy would you single out? Justify the answer.

Task 3. Last year, the actual GDP of a country was 4,000 billion EUR. In the current year, the government plans to increase GDP to 5,000 billion EUR to reach its equilibrium potential. In recent years, the marginal propensity to consume in the country was 0.75. By how much should public spending be increased for the economy to reach equilibrium?

Task 4. In 2016, the cash ratio was 10 %, the actual cash reserve ratio was 30 %, and the monetary base was 200 million USD. In 2018, the cash ratio was 25 %, the actual cash reserve ratio did not change, and the monetary base increased by 100 million USD. If the money supply is governed by the mechanism of the money multiplier, how has it changed during this period?

Task 5. Last year, the actual GDP of a country was 5,000 billion EUR. This year, the government plans to increase GDP to 8,000 billion EUR to reach its equilibrium potential. In recent years, the marginal propensity to consume in the country was 0.7. By how much should public spending be increased for the economy to reach equilibrium?

Essay topics

1. Decisive the methods of direct or indirect regulation in the modern economy.

2. What economic functions and tasks of the state are mandatory for any country?

3. What is the difference between the role of the state in industrialized countries, post-socialist countries and developing countries?

References: [2; 7; 9].

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ОСНОВИ ЕКОНОМІКИ

**Навчальний посібник
для самостійної роботи**

***За загальною редакцією
д-ра екон. наук, професора М. А. Мащенко***
(англ. мовою)

Самостійне електронне текстове мережеве видання

Відповідальний за видання *М. А. Мащенко*

Відповідальний редактор *О. С. Вяткіна*

Редактор *З. В. Зобова*

Коректор *З. В. Зобова*

Подано ключові теоретичні положення основ економіки; розглянуто основні економічні закони та механізми використання цих законів у господарській діяльності; проаналізовано загальнотеоретичні засади соціально-економічного життя суспільства, сучасний стан функціонування та перспективи розвитку економічних систем.

Рекомендовано для самостійної роботи слухачів підготовчого відділення.

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