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# MACROECONOMICS

Textbook



**MINISTRY OF SCIENCE AND HIGHER EDUCATION  
OF THE RUSSIAN FEDERATION  
KAZAN FEDERAL UNIVERSITY**

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# **MACROECONOMICS**

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The textbook “Macroeconomics” is recommended for undergraduate and graduate students of all fields of study of Kazan (Volga region) Federal University, as well as for the use in the educational process by students of various fields in educational institutions of higher education, including a wide range of readers. The textbook can be helpful for scientists and managers of various levels of government interested in the problems of Macroeconomics.

The textbook discusses the main topics of the course “Macroeconomics” in accordance with the Federal State Educational Standards for Higher Education of the new generation.

The structure of the textbook allows not only to master the theoretical knowledge of the course “Macroeconomics”, but also to acquire the necessary practical skills for self-study. Each chapter covers the most important macroeconomic issues, contains terms and definitions, as well as review questions for better mastering the course.

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# CHAPTER 1. INTRODUCTION TO MACROECONOMICS

## Chapter questions:

1. Macroeconomics as a science. Macroeconomic methods.
2. Social reproduction. The circular flow model of national economy. Leaks and injections.

## 1. Macroeconomics as a science. Macroeconomic methods

Macroeconomics is one of the youngest and fastest growing branches of economic theory. Its special subject and specific research method began to take shape in the early 1930s. To form and develop macroeconomics as an independent section of economic theory, the following were of fundamental importance: firstly, the need for aggregated statistical data characterizing the development of the national economy as a whole; secondly, the Great Depression, when the results of economic evolution came into conflict with the theoretical conclusions of the classical economic school on the ability of the market mechanism to self-regulation; thirdly, the need arose for a theoretical substantiation of the countercyclical policy of the state.

The founder of modern macroeconomic theory was the British economist J.M. Keynes (1883-1946), who developed a scientific concept explaining the occurrence of fluctuations in the economy, and proposed a special program of government action to overcome the depression and to smooth the economic cycle. Keynes's main theoretical ideas were outlined in his work "The General Theory of Employment, Interest and Money", published in 1936. Despite the fact that a number of the provisions and conclusions of this work have now been criticized fairly, in the opinion of many modern scientists, it is the most significant economic work of the XX century. The subject of macroeconomics is the laws that govern the functioning of the economy as an integral system at the level of aggregated

indicators. Aggregates are the concepts used by macroeconomics. These are scientific abstractions that are combined, according to any criterion, into a single whole set of economic phenomena or processes.

There is no compelling border between micro- and macroanalysis. Both spheres of human activity are at the level of the firm (industry) and on the scale of the country, both parts of economic theory are closely interrelated. However, the division of levels, even with its certain conventionality, is useful from a methodological point of view and reflects real-life differences. The interests of an individual, a firm, an industry and the interests of society are not equal.

In macroeconomics, as in other sections of economic theory, both general scientific research methods and specific ones are used.

The main general scientific methods used in macroeconomic research include a combination of analysis and synthesis, the unity of the logical and historical aspects of consideration, the method of scientific abstraction, system-functional analysis, economic and mathematical modeling, and a combination of positive and normative approaches.

Specific methods of macroeconomic research are the following:

1. The aggregation method is aimed at studying the formation principles of aggregated indicators that characterize the level or trends in the development of the economy as a whole. The aggregation method makes it possible to widely use economic models when analyzing macroeconomic processes. This is an abstract display of real phenomena and processes in the economy studied with their help.

2. Macroeconomics also uses the equilibrium approach known from microeconomics when studying aggregated values.

3. As in microeconomics, the “*ceteris paribus*” method is used.

4. Macroeconomic analysis involves the division of variables into endogenous and exogenous. Endogenous variables are determined within the economic system, exogenous variables - outside it.

5. Representation of economic variables as flows and as stocks. Flow is an economic variable that is measured in motion, taking into account the

period of time for which the calculation is made. The stock is calculated on a specific date.

It should be noted that the question of the goals and methods of implementing macroeconomic policy is one of the most controversial. It is on this issue that the differences between different schools of macroeconomic theories are most clearly visible.

The theoretical basis for the ambiguous interpretation of the goals and objectives of macroeconomic policy is a different understanding of the market's ability to self-regulation and crisis-free economic development.

Key issues in macroeconomics include:

- optimal volume of aggregate production (formation of the volume and structure of the social product);
- interaction of the real and monetary sectors of the economy;
- analysis of economic business cycles (reasons for cyclical fluctuations and market changes in the economy);
- interaction of inflation and unemployment (nature and socio-economic consequences of inflation; factors that regulate employment on the national economy scale and determine the level of unemployment);
- analysis of the country's trade balance (the relationship of national markets within a country and with a foreign sector of the economy; impact on the state and development of the national economy of international economic relations);
- achieving an effective macroeconomic policy of the state (factors and mechanism of economic growth; the impact of state policy on the results of the national economy and trends in their change).

## **2. Social reproduction. Circular flow model of the national economy. Leaks and injections**

Although macroeconomics was formed at the beginning of the 20th century, François Quesnay (1694–1774) is considered the founder of macroanalysis of the reproduction process. In 1758, he described the process

of GNP reproduction as a circulation of cash flows, which, in his opinion, is analogous to blood circulation in the human body.

The next macroeconomic model appeared in economics only more than 100 years later. In the second volume of *Capital* (1885), K. Marx investigated classical capitalism of the industrial revolution era, consisting of two classes - capitalists and wage workers, revealed the conditions and laws of simple and extended reproduction. Using a two-sector model of the national economy, he analyzed the conditions for simple and extended reproduction of the aggregate social product. At the same time, he drew attention to the necessary correspondence between the value and natural-material structure of the aggregate social product.

Social reproduction is the continuous renewal of material goods and services in the process of production, distribution, exchange and consumption. Simple reproduction is the resumption of production at a constant rate. Expanded reproduction is the resumption of production on an expanded scale.

The result of social reproduction is the gross national product (GNP), which goes through a number of stages in its movement: production - transformation and adaptation of natural materials for human needs; distribution - determining the share, proportion of the participation of each participant in economic activity in a production product; exchange – the movement of material goods and services from one participant of economic activity to another; consumption - using the results of production to meet needs.

The theoretical basis to analyze the reproduction process in modern conditions is the circular flow model of the national economy.

The circular flow model of the national economy is a model of the economic system that describes the flows of goods and services that are exchanged by economic entities, balanced by the flows of cash payments.

The main subjects of a market economy are households and firms. Households have a demand for consumer goods and services, being at the same time suppliers of economic resources. Firms demand resources, offering

in turn consumer goods and services. The upper part of the figure is the basis for studying the markets for goods, the lower part of the figure is the basis for studying the markets for factors of production. Economic benefits act as a means of communication between economic agents (Figure 1.1).

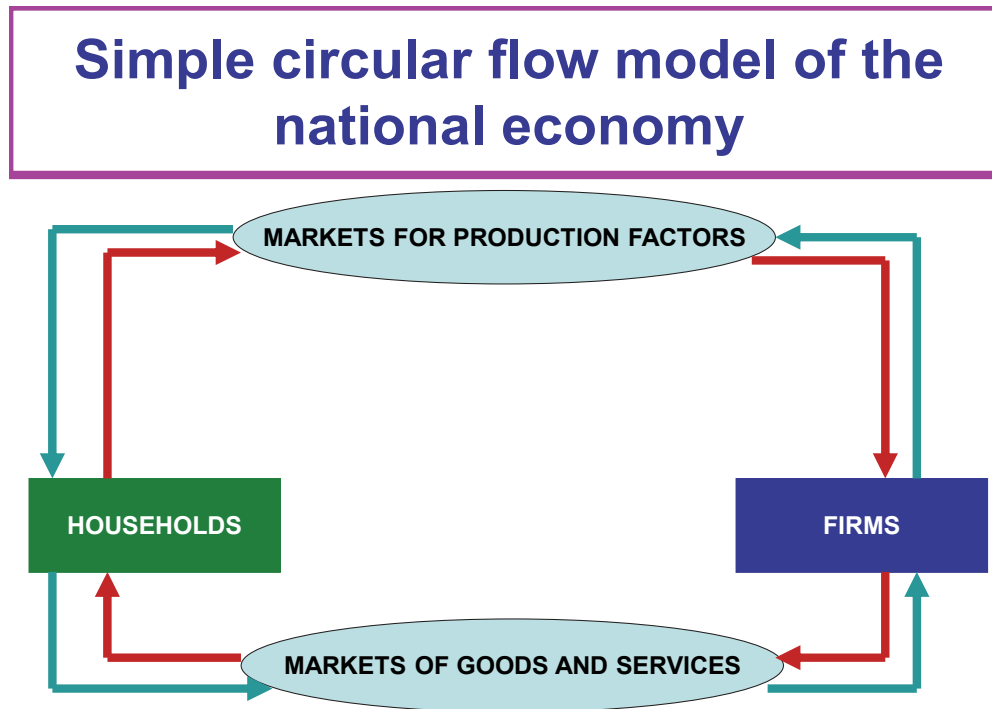


Figure 1.1. A simple circular flow model of the national economy

A circular flow of the economy is a circular movement of real economic benefits, accompanied by a counter flow of cash income and expenses. This model can be refined by including the rotations within the sectors.

Emphasizing the main thing, a simple circular flow model separates itself from the role of the state, which influences both the agents of the market economy and the markets of products and factors of production. The functions of the state in the circular flow can be represented as follows (Figure 1.2).

Households and firms pay taxes to the government, receiving transfer payments and subsidies in their turn. In addition, the government makes large purchases in the markets. This model does not take into account the

saving of both real economic benefits and monetary resources, as well as the fact that some resources may fall out of the turnover process.

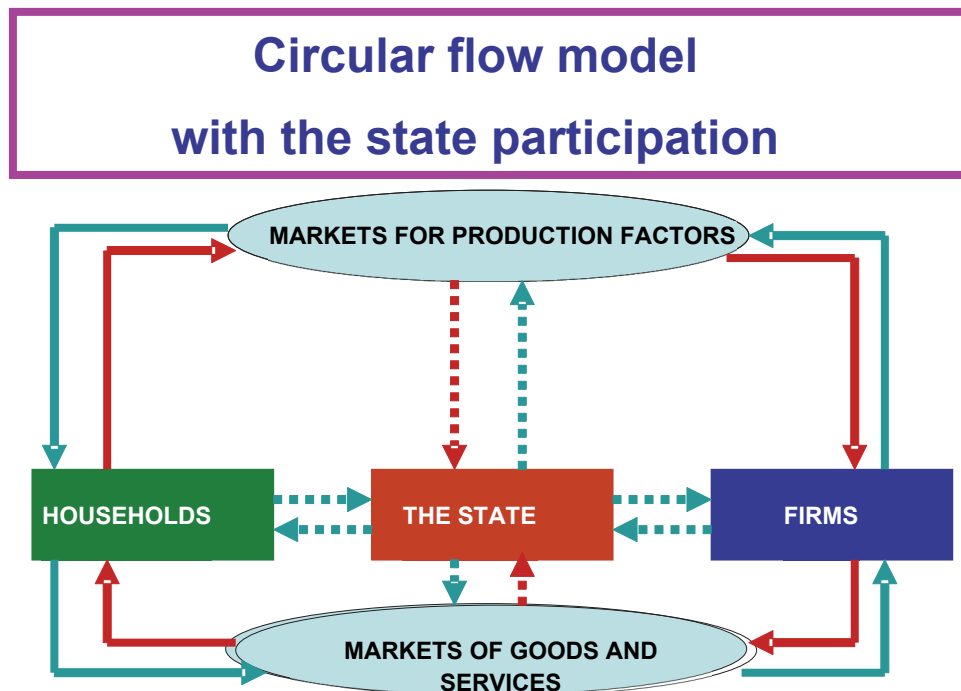


Figure 1.2. Circular flow model of the national economy with the state participation

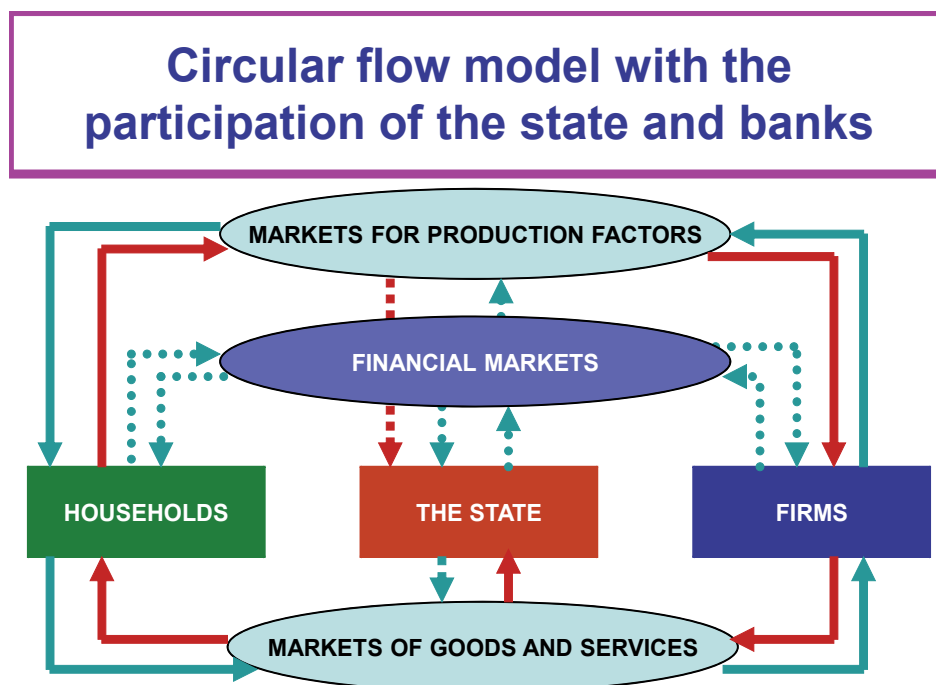


Figure 1.3. Circular flow model of the national economy with the participation of the state and banks

Let us imagine a more complex picture when, in addition to households and firms, the state and financial structures that redistribute monetary resources take part in the circulation process.

The most important of the consequences is the development of the credit system. On the new circular flow scheme, four participants in economic transactions operate: households, enterprises, the state, banks (Figure 1.3).

Finally, the circular flow model can be refined to include international trade.

The foreign sector is connected with other economic entities, firstly, through the import of goods and services. The imported goods and services enter country's market of goods, and the counter flow of cash payments reflected in the circular flow model goes from the market of goods to the foreign sector of the economy. The second way of connecting the national economy with abroad is the export of goods and services. Cash received in exchange for the value of goods and services sold to foreign buyers goes to product markets, where it merges with cash flows from the sale of goods to domestic households and the state. The difference between the amount of cash receipts from exports and cash payments from imports is called net exports.

In addition, the economy is linked to the outside world through various international financial transactions. These operations lead to the emergence of payment flows directed both inside the economic system and outside it. The first of these flows is usually called capital inflows, the second - capital outflows. The difference between capital inflows and outflows is called net capital inflows. Its positive value means that through loans in the world financial markets, the country attracts funds for capital accumulation.

A flow is a quantity over a period of time. In macroeconomics, as a rule, the unit of time is a year. The flow indicators include: total output, total income, consumption, investment, deficit (surplus) of the state budget, the number of the unemployed, exports, imports, etc., since they are all calculated every year, i.e. per one year. All indicators displayed in the



circular flow diagram are flows. (It is no coincidence that this scheme is called the circular flow model).

A stock is a quantity at a given point in time, i.e. on a specific date (for example, January 1, 2022). Stock indicators include national wealth, personal wealth, capital stock, the number of the unemployed, production potential, government debt, etc.

Ideally, in an economy, the amount of income is equal to the amount of expenses, as well as to the volume of production in monetary terms. If this condition is not met, the economy loses its stability. Imbalances are caused by leaks and injections into the circuit.

**Leaks** (or withdrawals) from national income occur when it is spent on purposes other than purchases of domestically produced consumer goods and services.

**Injections** are expenses that are incurred in addition to the expenses of domestic consumers for the purchase of products manufactured domestically.

From the flow “income-expenses” the following drains:

- savings;
- tax payments;
- costs of purchasing imported goods and services.

The income-expenses flow includes:

- capital investments of domestic and foreign investors;
- export earnings;
- government spending.

Thus, the circular flow model, in the most general form, represents the nature of the relationship between individual spheres and sectors, their role and mutual influence.

### ***Terms and definitions:***

**The subject of macroeconomics** is the laws that govern the economy as an integral system at the level of aggregated indicators.

**Macroeconomic aggregates** are scientific abstractions that unite a multitude of economic phenomena or processes into a single whole on some basis.

**Households** are an independent, rationally acting macroeconomic agent whose economic activity is aimed at maximizing utility.

**Firms** are an independent, rationally acting macroeconomic agent whose economic activity is aimed at maximizing profits.

**The state** is state institutions and organizations that have the political and legal right to influence the course of economic processes, to regulate the economy.

**Social reproduction** is the continuous renewal of material goods and services in the process of production, distribution, exchange and consumption.

**The circular flow** model is a model of the economic system that describes the flows of goods and services that are exchanged by economic entities, balanced by the flows of cash payments.

***Review questions:***

1. What is the reason for the formation of macroeconomics as a science?
2. List the main problems of macroeconomics.
3. What are the main macroeconomic goals?
4. Macroeconomic aggregation as a method of analysis in macroeconomics.
5. Macroeconomic models and their use in macroeconomic analysis.
6. The concept of social reproduction and its main stages.
7. Name the types of reproduction.
8. The concept of the circular flow model of national economy.
9. How are flows different from stocks?
10. What are leaks and injections?

## CHAPTER 2. ECONOMIC STRUCTURE

### Chapter questions:

1. The essence of the economic structure. Classification of structures in the economy.
2. Cross-industry network. Structure of the agro-industrial complex, military-industrial complex (MIC).
3. Shadow economy as a type of economic activity.

### 1. The notion of economic structure. Classification of structures

The theory of structures takes a rather honorable place in economics. Much attention was paid to these problems, in particular, by the Nobel Prize winners L. Kantorovich and S. Kuznets, W. Leontief and others.

In general, structure means a way of regulating organized units, which consist of numerous elementary parts that are different in nature.

The economic structure of a society is the ratio between many macroeconomic elements that are closely interconnected.

Each country develops its own economic structure that characterizes the activities ratio of households, firms, individual industries, sectors of the economy in the national economy of the country, as well as the ratio of the national and the world economy.

The economic structure can be studied according to various criteria. At the same time, certain macroeconomic proportions are formed.

Macroeconomic proportions are quantitative relations between individual elements of the economy, characterizing structural changes in the economy.

According to the degree of *aggregation*, the proportions are divided into:

1. General economic proportions - proportions between aggregates formed without taking into account the structure of the social division of labor.

2. Proportions reflecting the structure of the social division of labor: cross-industry; intra-industry; interregional; interstate ones, etc.

From the point of view of the development prospects of production, the analysis of the territorial (regional), socio-economic, reproductive, sectoral structures of the social product is important in macroeconomic research.

The regional structure of the economy determines the allocation of productive power throughout the country. A region should be understood as a relatively isolated subsystem of the national economy, which is a large subject of ownership and economic activity and has a number of specific features. Scientific understanding of the spatial aspect of the economy happened in the late nineteenth and early twentieth centuries. The following important structures were identified:

1. Essential products must be produced in each locality;
2. Clothing, household services - in medium-sized settlements;
3. Luxury items, theaters, museums, etc. – only in large cities.

In 1930s, Swedish economists Heckscher and Ohlin came to the conclusion that regions export the products which use their abundant and cheap factors of production, and import the products which use the countries' scarce factors. Thus, labor-intensive regions should specialize in the production of labor-intensive products. Developed regions must export capital-intensive products.

The regional features of Russia are associated primarily with a vast territory, a variety of natural, climatic, social and other conditions, and uneven economic development. At the same time, the development gap between the regions continues to deepen. Almost two-thirds of the total volume of industrial production and its growth is provided by three federal districts: the Volga, Urals, and Central. The following figures are illustrative: in the Asian part of Russia, on an area of 15 million sq. km - this is 5 times more than the European territory of our country, only 20 million people live. 80% of Russia's natural wealth is concentrated here.

The socio-economic structure reflects the ratio of population social groups. According to sociological studies of the population that is employed in social production, the stratification model of modern Russian society is as follows: the elite (0.5%); the upper sector - large and medium-sized entrepreneurs, directors of enterprises (6.5%); middle sector - representatives of small businesses, qualified professionals, middle management (20%); major sector - average executives, workers, peasants (60%); the bottom sector - low-skilled and unskilled workers, temporarily unemployed (4-5%); underworld (6%). Under these conditions, an important task is to equalize social differentiation.

In terms of the production development prospects in macroeconomic analysis, the reproduction and sectoral structures are of the greatest importance.

Reproduction structure is a structure that reflects the division of the constituent parts of a social product, depending on their functional purpose.

The sectoral structure of production characterizes the existing system of distributing production resources by main types of activity, as well as the share of individual industries in the total volume of national production.

In modern Western literature (A. Fischer, C. Clark) the “three-sector model” is used. This theory is based on the division of all industries into “primary”, “secondary” and “tertiary” sectors. The “primary sector” includes industries related to the production, extraction and use of natural resources (agriculture, forestry, fisheries). The “secondary sector” consists of manufacturing industries; the extracting industry is sometimes referred to the first, sometimes to the second sector. The “tertiary sector” includes service industries - transport, education, government, trade, finance, army, etc.

The sectoral structure in the course of economic development, as a rule, undergoes significant changes. Among the regularities in the development of the sectoral structure at the present stage are: outstripping growth of industry compared to agriculture, which is expressed in a decrease in the share of agriculture in GDP; increasing the share of the service sector in the total volume of national production; a gradual decrease in the share

of industry, caused, on the one hand, by the outstripping growth of the service sector, and, on the other hand, by an increase in the efficiency of industrial production and a decrease in the role of basic industries.

## **2. Cross-industry networks. Structure of the agro-industrial complex, military-industrial complex (MIC)**

Cross-industry networks include groups of interrelated industries, industries, united by one or more types of economic ties. These are: the unity of the tasks to be solved, the purpose and interchangeability of products; production-technological or resource-industrial relations; common technology and production capacities; integrated use of common production resources.

The following cross-industry networks are distinguished: military-industrial, fuel and energy, machine-building, metallurgical, agro-industrial, etc.

The agro-industrial sector (AIS) is a set of agricultural sectors and related sectors of the economy to produce agricultural machinery, agricultural products, their processing and sale. The agro-industrial sector is a vital one in country's economy. It is here that the bulk of food is produced, whose availability is the first condition for human life. The structure of the agro-industrial complex is formed by: production of capital goods for agriculture; agriculture proper; processing and sale of finished products.

The most important component of the agro-industrial sector is the food facility (FF), which does not include the processing of agricultural raw materials for non-food purposes.

The tendency of non-agricultural sectors to predominate in the agro-industrial system that is inherent in the developed economies predetermines their leading role in agribusiness. Agribusiness is, in a market economy, a specific form of coordinating the provision of agriculture with the necessary resources and the implementation of sequential operations for the production, processing and distribution of food and technical raw materials.

The goal of agribusiness is to maximize income through the satisfaction of needs.

In modern conditions in Russia, exclusive responsibility of the state in the economy includes the military-industrial sector - a key link in the real sector of the economy. The Russian military-industrial sector is the highest quality, high-tech sector of the economy.

The outsized development of the national military-industrial sector led to an imbalance in our economy, which was the fundamental basis for a protracted economic and financial crisis. The military-industrial sector has become a constant facilitator of inflation. It can be said that the high level of militarization of the economy has become one of the reasons for our country's collapse, structural deformation, hindering the development of the economy.

Under the conditions of radical transformations in the economy, the restructuring of the military-industrial sector begins. Conversion is becoming an integral part of reforming the military-industrial sector. Conversion is a liberal restructuring of the national economy, the process of transferring the armaments economy, military civil purpose.

The largest part of Russia's potential for innovation is concentrated in the defense industry. It includes the latest achievements of the country both in the organization of production and in the field of technology and the best personnel of scientists, specialists and workers.

### **3. Shadow economy as a type of economic activity**

Shadow economy is an economic activity that develops outside of state accounting and control, and therefore is not reflected in official statistics. Reasons for the emergence of the shadow economy are high taxes, economic instability, economic crisis, insecurity of property rights, unfavorable social background, political instability.

The shadow (*unrecorded, unregistered*) economy includes such types of economic activity as *hidden, informal, illegal*.



**Hidden** economic activity includes, in most cases, economic activity that is not prohibited by law, which is hidden or downplayed by the entities engaged in it in order to evade taxes, social security contributions or perform certain administrative duties. This activity can be done in almost all sectors of the economy.

**Informal** economic activity is performed mainly on a legal basis by individual producers or so-called unincorporated enterprises and is associated with the impossibility or impracticality of accounting.

**Illegal** (underworld) economic activity is illegal, that is, it covers those types of production of goods or services that are expressly prohibited by existing legislation. Currently, such activities include the production and sale of drugs, production and sale of weapons, bypassing the established rules, prostitution, smuggling.

Tax avoidance of participants in the shadow economy shifts the burden of producing public goods to a smaller number of taxpayers. The state is forced to raise taxes to carry out its programs. And this, in turn, encourages the growth of the shadow sector.

One of the reasons for the growth of the shadow economy is too high cost of obeying the law. This price consists of transaction costs associated with the costs of registering your business, obtaining licenses, as well as legal registration of contracts; it is also associated with the costs of paying taxes to the state and the implementation of legislation in the field of labor, ecology, social programs, etc. When the costs of complying with the law are so great that they do not allow business to grow, firms go underground.

Another reason is that in developing and emerging countries, the legal and judicial systems are in their infancy, and the state is unable to fully protect the rights and interests of citizens.

### ***Terms and definitions:***

**The economic structure** of society is the ratio between many macroeconomic elements that are closely interconnected.

**Macroeconomic proportions** are quantitative relations between individual elements of the economy that characterize structural shifts in the economy.

**Reproduction structure** reflects the division of the constituent parts of the social product, depending on their functional purpose.

**Sectoral structure** characterizes the existing system of distribution of production resources by the main types of activities, as well as the share of individual industries in the total volume of national production.

**Cross-industry networks** include groups of interrelated industries, industries, united by one or more types of economic ties.

**The agro-industrial sector** is a set of agricultural sectors and related sectors of the economy to produce agricultural machinery, agricultural products, their processing and sale.

**The shadow economy** is an economic activity that develops outside of state accounting and control, and therefore is not reflected in official statistics.

***Review questions:***

1. Criteria for the classification of economic structures.
2. Basic forms of macroeconomic proportions.
3. Methodological approaches to the classification of the sectoral structure.
4. Characteristics of the reproduction structure.
5. Describe the sectoral structure of the Russian economy.
6. What characterizes the regional and social structures?
7. Agro-industrial sector.
8. Military-industrial sector.
9. The structure of the shadow economy.
10. Causes and consequences of the shadow economy.

## **CHAPTER 3. THE SYSTEM OF NATIONAL ACCOUNTING. MACROECONOMIC INDICATORS IN THE SYSTEM OF NATIONAL ACCOUNTING**

### **Chapter questions:**

1. The system of national accounts as a reflection of the circular flow of goods and incomes.
2. Key indicators of the SNA. Basic macroeconomic identities.
3. W. Leontief's "input – output" model. Intersectoral balance.

### **1. The system of national accounts as a reflection of the circular flow of goods and incomes**

Before proceeding to the consideration of the main macroeconomic problems, it is necessary to determine the indicators that can be used in macroeconomics.

Since the 1920s, many economists begin to specialize in the study of macroeconomic issues, which contributes to the accumulation and systematization of statistical data on macroeconomic processes.

In 1920, W. Mitchell founded the National Bureau of Economic Research (NBER) in the USA. In 1931, at his invitation, W. Leontief began working in this bureau.

Also in 1920, in Soviet Russia, under the People's Commissariat of Finance, the Institute for the Study of Economic State was established, in which the well-known economists and statisticians began to work (N.D. Kondratiev, A.L. Vainshtein, A.A. Konyus, M.V. Ignatiev, E.E. Slutsky). This institute carried out comprehensive studies of the economic development of our country and the leading capitalist states in order to develop scientific forecasts and methods to manage the national economy. In the USSR, a system of indicators and tables was created that was named the balance of the national economy, which was already used to prepare the first five-year plan for the national economy development (1928-1932).

After the Second World War, international economic organizations joined to develop a system of macroeconomic indicators, and in 1953 the UN published “The System of National Accounts and Auxiliary Tables”, a document, which can be considered as the first internationally recognized version of the system of macroeconomic indicators. This system was revised in 1993.

The current system was launched in 2008. It covers all spheres of production, with the exception of some household services, which are almost impossible to take into account.

It included new definitions and classifications of the GDP and national income components, such as:

- intellectual property accounting,
- derivative financial instruments,
- spending on R&D and armaments;
- consistency of statistics (SNA, BPM6, public finance, monetary and financial) and accounting,
- phased implementation of the SNA,
- inflation analysis,
- international comparisons of GDP.

Since the late 1980s, with the transition to a market economy Russia moved from the balance of the national economy to the international indicators of the system of national accounts.

The System of National Accounts (SNA) is a system of interrelated indicators used to describe and analyze macroeconomic processes. It provides information about all stages of the economic cycle. Each stage of the economic cycle corresponds to a special account or group of accounts. The SNA takes into account the activities of all participants in social production and contains indicators that summarize all economic transactions.

As a result of information processing, a set of balance tables is compiled, where the indicators make it possible to determine generalizing

macroeconomic indicators that characterize the state of the economy and the dynamics of economic growth.

Economically full-fledged entities whose economic activity is reflected in the SNA are called institutional units. They must be resident, i.e. operating in the country on a permanent basis. The decisive criterion in determining the residency of an economic entity is the location of its center of interest in the economic territory of a particular country.

## **2. Key indicators of the SNA. Basic macroeconomic identities**

To measure production volumes in macroeconomics, indicators included in the system of national accounts are used. The most important indicators used in the modern SNA are: **GDP** - *gross domestic product*; **GNP** - *gross national product*; **NDP** or **NP** - *net domestic or national product*; **NI** - *national income*; **PI** - *personal income*; **DI** is *disposable income*. The main indicator of the SNA is GDP. Other SNA indicators are derived from GDP in a calculated manner.

Gross domestic product (GDP) is the total value of goods and services produced within a country's borders over a given period of time. As a rule, GDP is calculated for the year.

Close, though not identical to GDP indicators, is the gross national product GNP. GNP is the total value of goods and services produced by residents of a given country in a given period.

As follows from the definitions, the difference between GDP and GNP lies in the basis on which goods and services are sampled, included in the indicator: based on geographic location (GDP) or based on nationality (GNP). GDP answers the question where the product is created; GNP - which country it belongs to.

In recent years, when calculating the gross product, preference is given to GDP over GNP, and most countries use this indicator. Russia also uses the GDP indicator in the SNA.

There are three ways to calculate GDP: expenditure - as the sum of end-user spending to purchase goods and services (final use method) - production account; income - as the sum of income of business entities created in the production process (distributive method) - distribution account; value added (production method).

GDP by expenditures is calculated as the sum of the total expenditures of all market economy entities. As is known from microeconomics, three main economic entities participate in the economic activity of the country: households, firms and the state. It is they who carry out the total expenditures.

The components of these costs are identified and named as follows:

C (consumption) - personal consumer spending, household consumption; these include funds of the population to purchase current consumption goods, durable goods, as well as to make payments;

I<sub>g</sub> (gross investment) - gross private domestic investment, consumption of firms; it consists of purchases by entrepreneurs of machinery and equipment, all construction costs and changes in working capital stocks; gross investment includes domestic investment and depreciation:

$$I_g = I_n + d \quad (3.1)$$

where  $I_n$  is net investment;

$d$  is depreciation;

G (government) – government spending; it includes government spending to purchase goods and services (final products), as well as to purchase production resources (public procurement); the only type of state budget expenditures that are not included in this element of total expenditures are transfer payments, which do not reflect an increase in current production, but are a form of redistribution of public expenditures;

NX (net export) – net export, added to the components of total expenditures in an open economy; defined as export (X – export) minus import (M – import):

$$NX = X - M \quad (3.2)$$

Thus, the calculation of GDP produced by expenditure (Y) can be represented by the equation:

$$Y = C + I_g + G + NX \quad (3.3)$$

An equation written in this form is called the basic macroeconomic identity.

GDP by income characterizes the distribution for the income of business entities (remuneration for labor, rental payments, interest, profit) and the formation of distributed funds not related to the payment of income. It is calculated as the sum of all incomes of all production factors (labor, land, capital, entrepreneurship) involved in production activities. The final calculation of GNP (GDP) by income can be represented by the equation:

$$Y = W + R + r + P + d + Ti \quad (3.4)$$

The components of these incomes are designated and named as follows:

W - remuneration for the work of employees; wages directly paid by firms to employees, as well as many additions to wages (contributions of entrepreneurs to social insurance, private social security funds, medical care, etc.) are included;

R - rental income (payments); income received by the owners of land, buildings and structures and other real estate;

r - interest; forms an item of income for the owners of money capital;



P - profit; consists of two main elements - corporate profits and property income of the unincorporated business sector.

Funds not related to the payment of income include:

d - depreciation;

Ti is net indirect taxes on business, i.e. taxes minus subventions.

Along with the calculation of GNP (GDP) by expenditure and income, there is a third method of calculating it, based on the concept of value added. Value added is the difference between the proceeds from the sale of products (of an individual firm or industry as a whole) and the cost of raw materials and materials consumed in the production of these products.

In the SNA, GDP by value-added is defined as the sum of the value of goods and services produced in a country, minus the value of intermediate products at each stage of production. Thus, GDP in macroeconomics acts as the sum of the value added of all producers and enables to take into account the contribution of various firms and industries to the creation of GDP. For the economy as a whole, the sum of all value added must equal the value of all final goods and services.

The System of National Accounts (SNA) includes other indicators in addition to GDP. The indicator derived from GDP (GNP) is Net domestic product - this is GDP minus depreciation.

It is necessary to distinguish between nominal and real macroeconomic indicators and, above all, nominal and real GDP. Nominal GDP is GDP calculated at current prices. Real GDP is GDP that has had the change in the price level removed. The ratio of nominal GDP to real GDP is called the GDP deflator.

The deflator is one of the most widely used price indices that measures changes in the price level in a country. In addition to the GDP deflator, other price indices are also used: consumer price index (CPI), producer price index (PPI). At the same time, both fixed sets of goods (the so-called “consumer basket”) and changing ones can be used as price weights. In this regard, the Laspeyres, Paasche and Fischer price indices should be singled out.

Laspeyres index (IL) are indices for an unchanged set of goods, an unchanged consumer basket is used as price weights:

$$I_p = \frac{\sum p_1 q_0}{\sum p_0 q_0} \quad (3.5)$$

Paasche index are indices for a changing set of goods, or with variable weights:

$$I = \frac{\sum p_1 q_1}{\sum p_0 q_1} \quad (3.6)$$

Recently, the Fisher index, which is the geometric mean of the Laspeyres and Paasche indices, has been widely used.

### 3. W. Leontief's “input – output” model. Intersectoral balance

In the 1930s, to analyze the structural conditions of national economic reproduction, W. Leontief developed a model of intersectoral balance (ISB).

## INPUT-OUTPUT MODEL

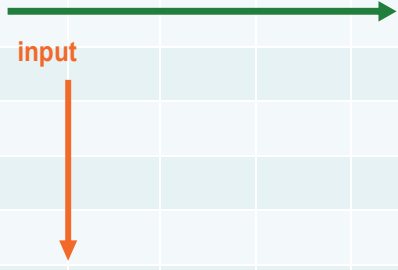
	E	M	S	I	C	I	G	NX	Y
E	A11Y1	A12Y2	A13Y3	M1	C1	I1	G1	NX1	Y1
M	A21Y1	A22Y2	A23Y3	M2	C2	I2	G2	NX2	Y2
S	A31Y1	A32Y2	A33Y3	M3	C3	I3	G3	NX3	Y3
I	M1	M2	M3	ΣM	ΣC	ΣI	ΣG	ΣNX	ΣY
W	W1	W2	W3	ΣW	output				
R	R1	R2	R3	ΣR					
r	r1	r2	r3	Σr					
P	P1	P2	P3	ΣP					
d	d1	d2	d3	Σd					
Ti	T1	T2	T3	ΣTi					
Y	Y1	Y2	Y3	ΣY					

Figure 3.1. Intersectoral balance model (“input-output”)

In the western developed countries, this model is widely used under the name “input-output model”. At present, this model is widely used in practical calculations of production costs and prices, in the analysis of intersectoral relations and in determining the structure of aggregate social product. It can also be viewed as a set of national accounting tables (Figure 3.1).

A simplified model of the ISB of the economy, consisting of only three industries (E - extracting, M - manufacturing, S - services), is presented in the table.

The table shows that, on the one hand, all industries act as producers and form an aggregate supply of goods and services, and sell them to other industries. In this capacity they under the name "output" are written down in lines of balance. On the other hand, these same industries act as consumers, and in this capacity they form aggregate demand, they are buyers of material goods and services offered by other industries. As buyers named “input”, they are recorded in the balance columns.

There are three quadrants in the ISB model. Quadrant I reflects all intersectoral flows of intermediate products (**I**). The indicator  $a_{ij}$  represents the amount of products of industry (**i**), productively consumed in industry (**j**).

Quadrant II also shows, broken down by industry, the structure of GDP use: household consumption (**C**), investment (**I**), government spending (**G**), net exports (**NX**). The sum of the intermediate and final products forms the aggregate social product.

Quadrant III presents the formation of the final product or the sectoral structure of GDP: remuneration for the work of employees (**W**), rental income (**R**), interest (**r**), profit (**P**), depreciation deductions (**d**) and indirect taxes on business (**Ti**).

Thus, the ISB reveals both the sources of the formation of a social product and the directions for its use.

### ***Terms and definitions:***

**The System of National Accounts (SNA)** is a system of interrelated indicators used to describe and analyze macroeconomic processes.

**Gross domestic product (GDP)** - the total value of goods and services produced within the borders of a given country for a certain period.

**Gross national product (GNP)** is the total value of goods and services produced by the residents of a given country in a given period.

**Nominal GDP** is GDP calculated at current prices.

**Real GDP** is GDP in which the change in the price level has been eliminated.

**The Laspeyres index** is an index for a fixed set of goods; a fixed consumer basket is used as price weights.

**The Paasche index** is an index for a changing set of goods, or with variable weights.

**The input-output model (intersectoral balance)** is a set of national accounting tables used in practical calculations of production costs and prices, in the analysis of intersectoral relations and in determining the structure of the aggregate social product.

***Review questions:***

1. Main differences between GNP and GDP.
2. Calculating of GDP (GNP) by expenditure.
3. Calculating of GDP (GNP) by income.
4. Calculating GDP (GNP) by value added.
5. The concept of the final and intermediate product.
6. GDP deflator (GNP)
7. Consumer price index.

## **CHAPTER 4. FUNCTIONAL FORMS OF THE SOCIAL PRODUCT: NATIONAL INCOME AND NATIONAL WEALTH**

Chapter questions:

1. The essence of the national income. Distribution, redistribution and end use.
2. National wealth and its structure.

### **1. The essence of the national income. Distribution, redistribution and end use**

Various economists studied national income. As early as in 1664, W. Petty tried to analyze incomes in society and their distribution. He made a balance of income and expenses of the population of England at that time, he reduced the national income to the sum of the income of the entire population received from land, houses, capital and labor.

The problems of national income were studied by A. Smith and D. Ricardo. They determined the value of the entire social product by the sum of the incomes of society, excluding the value of the means of production included in the value of the product.

K. Marx considered the national income as a newly created value ( $V + m$ ) on a social scale, created by the living labor of hired workers.

The French economist J. B. Say believed that value and utility are the result of the services of three factors of production (labor, capital, land), and the total value of all products is the sum of the income of three classes - workers, capitalists and farmers. The national income is created by every person who receives income.

Modern Western economists share J.B. Say's view on national income, according to which each type of activity brings the same income, regardless of profession and field of activity.

Let us consider the place of the indicator of national income in the SNA. The most important indicators used in the modern SNA are gross

domestic product (GDP) and gross national product (GNP). In practice, however, the words “product” and “income” are often used interchangeably, so the indicator “gross national product” is also called “gross national income” (GNI).

Gross national income (GNI) is the total value of all goods and services produced during the year in the territory of the state (that is, GDP), plus income received by citizens of the country from abroad, minus income exported from countries by foreigners.

For most countries in the world, GDP and GNI do not differ significantly and are often considered interchangeable. The term “gross” means that the value of capital consumed in the production process has not been excluded from the total market value of goods and services produced. If this were done, then not a “gross” but a “net national product” would be obtained, which is practically equal to the national income.

Net domestic product (NDP) is obtained by subtracting depreciation charges from GDP; their removal from the GDP volume clears it of double counting. Accordingly, net national income (NNI) is determined by subtracting depreciation (consumption of fixed capital) from GNI.

The next stage of clearing is achieved with the National Income Index (NI). This indicator enables to free the manufactured product from price distortions as a result of government intervention. NI equals NDP minus indirect taxes.

You can define NI in other ways. It is necessary to remind that GDP in distribution consists of the income of the owners of production factors, depreciation deductions and indirect taxes. When calculating NI, the last two components are removed from its cost. Therefore, NI is equal to the sum of the primary incomes of the owners of production factors.

The indicator of national income has a deep economic meaning. The structure of NI is the most important indicator of the income distribution of different population segments and the social stratification of society. However, this important macroeconomic indicator is not counted in modern statistics.

After completing the redistributive processes, the actual income of the owners of production factors may differ greatly from the initial ones. Among all indicators of the SNA, the “personal income” indicator best describes the level and structure of income of individuals before taxes. Personal income (PI) is calculated by subtracting indirect taxes from NI and adding the balance of private and public transfers, as well as secondary (or redistributed) income, including those received in the form of interest. PI is income received, as opposed to NI, which is earned income.

Disposable personal income (DI) equals personal income less direct taxes. It shows how much households can actually manage. The main types of taxes paid from personal income include income tax, income tax in the unincorporated sector of the economy, property tax and inheritance tax.

The use of disposable income is also important for macroeconomic analysis: DI goes either to consumption or to savings. The proportions in which they correlate predetermine the resource base for investment in the country's economy (only the saved part of the DI can be invested, not the consumed part).

Relatively new to our economics is the measure of net economic well-being, which is used in addition to the measure of gross national income. This indicator is not a specific statistical indicator, it is not calculated in any country in the world, it reflects a new debatable concept of assessing the state of the economy in modern conditions.

Net economic well-being (NEW) is a generalizing macroeconomic indicator that characterizes the quality and standard of living of the population as a whole. Introduced into economics by V. Nordhaus and J. Tobin.  $NEW = GDP - \text{monetary value of negative factors affecting welfare} + \text{non-market activity in monetary value} + \text{monetary value of free time}.$

## **2. National wealth and its structure**

The SNA is focused mainly on reflecting flows. GDP, GNP, NI are flow indicators. However, no less important is information about



macroeconomic indicators of the reserve type. The most important of them is national wealth. The issue of national wealth, its essence and conditions of accumulation has always been the main problem of economic science. And with the development of economy and economic science, the concept of national wealth has periodically changed.

For the first time, national wealth was calculated by the English economist W. Petty in 1664; in France, the first estimate of national wealth dates back to 1789; in the USA – to 1805; in Russia – to 1864. Since 1853, the methodological problems of measuring national wealth have been the subject of international statistical congresses.

The International Association for the Study of National Income and Wealth was founded in 1947, and since 1966, it has published the journal *The Review of Income and Wealth*.

The most significant studies of the National Wealth in the twentieth century abroad were carried out by R. Goldsmith, who calculated the amount of national wealth in the USA for 1898–1948, 1905–50, 1945–58, and P. Redfern, who determined the amount of national wealth in Great Britain for 1938-1953.

In 1930s the Soviet statistician A.L. Weinstein calculated the value of Russia's national wealth as of January 1, 1914, showing its distribution by branches of the economy and social groups.

In Soviet economic literature, national wealth was understood as a stock of material goods created by labor and used for production and consumption, while natural wealth and labor power (labor) act as sources and conditions for creating national wealth. Some Soviet economists include natural resources in the national wealth. Finally, there is a point of view according to which the concept of national wealth should also cover non-material values - the amount of scientific knowledge, the level of culture of the population, etc.

Thus, several definitions of national wealth are proposed.

1. National wealth is a set of material and non-material benefits created by the labor of previous and current generations and involved in the

reproduction of natural resources that society has at a certain point in time; an important macroeconomic indicator that characterizes the economic power of the country.

2. National wealth is the general result of the constantly repeating process of social production throughout the development history of the national economy.

3. National wealth in the broad sense of the word is everything that a nation possesses in one way or another. In this sense, national wealth includes not only material goods, but also all natural resources, climate, works of art, and much more. However, all this is very difficult to calculate due to a number of objective reasons. Therefore, in the practice of economic analysis, the indicator of national wealth in the narrow sense of the word is used.

4. National wealth in the narrow sense of the word includes everything that is somehow mediated by human labor and can be reproduced. In other words, the national wealth of a country is a set of material and cultural benefits accumulated by a given country throughout its history, to a given point in time. This is the result of the work of many generations. **Annex** presents the structure of national wealth.

There are direct and inverse relationships between national wealth and the social product created in the country. Direct dependence is determined by the fact that the social product is the main source of replenishment and renewal of the national wealth. The inverse relationship lies in the fact that the very volume of the produced social product, the rate and absolute values of its growth depend on the accumulated national wealth, its size, structure and qualitative composition of its constituent elements. In the system of national accounts, national wealth is defined as the sum of the net equity capital of all economic entities, i.e. it includes, in addition to material resources, financial assets, non-productive tangible assets (copyrights, licenses, etc.), but financial liabilities are deducted.

### ***Terms and definitions:***

**Gross National Income (GNI)** is the total value of all goods and services produced during the year in the territory of the state, plus income received by citizens of the country from abroad, minus income taken out of the country by foreigners.

**Net economic well-being (NEW)** is a generalizing macroeconomic indicator that characterizes the quality and living standards of the population as a whole.

**National wealth** is a set of material and non-material benefits created by the labor of previous and current generations and involved in the process of reproduction of natural resources that society has at a certain point in time.

**National wealth in the SNA** is defined as the sum of the net equity capital of all business entities.

### ***Review questions:***

1. Differences between national wealth, national income, personal income, disposable income.
2. Production of national income and factors of its growth.
3. Forms of disposable income at the stage of final use.
4. Intersectoral balance as a tool for analyzing and predicting structural relationships in the economy.
5. The structure of national wealth in the SNA.
6. Problems of assessing the national wealth of Russia.
7. The concept of net economic welfare (NEW).

## CHAPTER 5. MACROECONOMIC BALANCE OF AGGREGATE DEMAND AND AGGREGATE SUPPLY

### Chapter questions:

1. Aggregate demand (AD). Aggregate supply (AS).
2. Equilibrium of Aggregate Demand and Aggregate Supply in the AD-AS Model.

### 1. Aggregate demand (AD). Aggregate supply (AS)

In macroeconomics, the idea of macroeconomic stability is usually shown in the Aggregate Demand-Aggregate Supply (AD-AS) model.

Aggregate demand (AD) is the total amount of economic goods that economic agents are willing to purchase at different price levels.

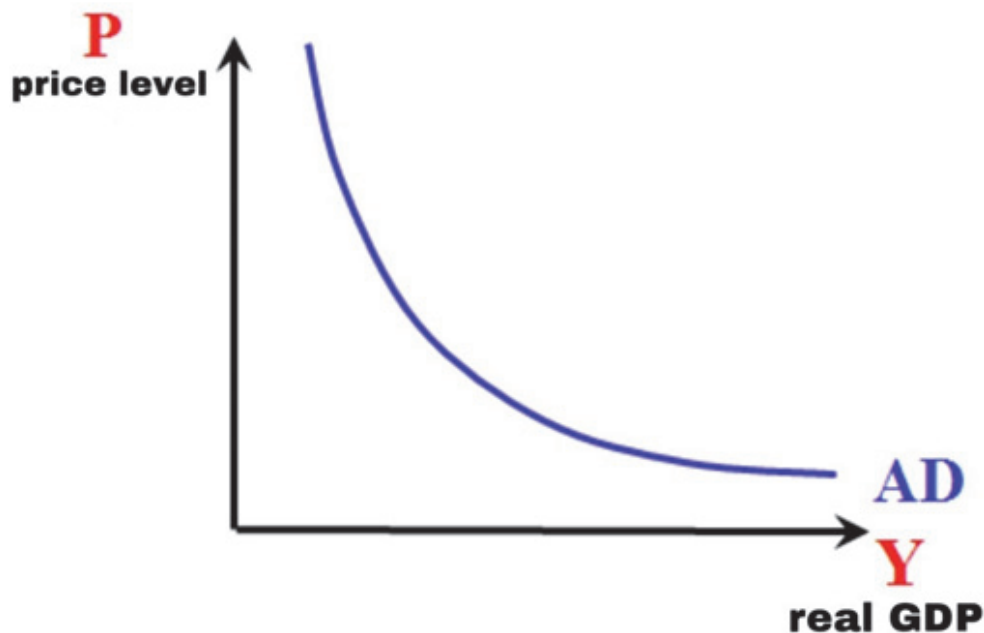


Figure 5.1. Aggregate demand curve

Aggregate demand is the sum of all expenditures on final goods and services produced in an economy. It reflects the relationship between the volume of aggregate output demanded by economic agents and the general level of prices in the economy. Accordingly, the components of aggregate

demand are the elements of the first macroeconomic identity, which are determined when calculating GDP in terms of expenditures (consumer, investment, government spending, net exports). They were discussed in the previous chapter.

The aggregate demand curve AD shows the quantity of goods and services that consumers are willing to purchase at each possible price level. It gives such combinations of output and the general level of prices in the economy, in which the commodity and money markets are in equilibrium (Figure 5.1)

The aggregate demand curve (AD) superficially resembles the market demand curve for a single product market in microeconomics. But this curve was constructed in a different coordinate system, and there are many differences between these curves. If, in the case of market demand, the quantity and price indicators were plotted along the axes, then for aggregate demand, these will be indicators of real production volume and price level, respectively.

The explanation of the negative slope of the AD curve is usually associated with the following effects in the market economy: the interest rate effect (*Keynes effect*), the wealth effect (*Pigou effect*) and the foreign purchases effect (*Mundell-Fleming effect*). These effects exert their influence on aggregate demand through prices. A change in the price level causes a movement along the aggregate demand curve.

They are among the price factors of aggregate demand. The interest rate effect influences the movement of the aggregate demand curve in such a way that, on the one hand, consumer spending and, on the other hand, investments depend on its level. More precisely, the problem is that as the price level rises, so do interest rates, and rising interest rates are accompanied by a reduction in consumer spending and investment. The fact is that an increase in the price level expands the demand for cash. Consumers need additional funds to make purchases, entrepreneurs need to buy raw materials, equipment, pay wages, etc. If the money supply does not change, this raises the price for using money, i.e. interest rate, which in turn

limits spending on both purchases and investments. This implies that an increase in the prices for goods increases the demand for money, raises the rate of interest, and thereby reduces the demand for the real volume of the national product produced.

The wealth effect also reinforces the downward trajectory of the aggregate demand curve. This is because with rising prices, the purchasing power of such financial assets as fixed-term accounts, bonds decreases, real incomes of the population fall, which means that the purchasing power of families decreases. If prices go down, purchasing power goes up and costs go up.

The foreign purchases effect is expressed in the ratio of national prices and prices on the international market. If prices on the national market increase, then on the international market sales of domestic goods decrease, buyers begin to purchase cheaper imported goods. Thus, foreign purchases effect leads to a decrease in aggregate demand for domestic goods and services. The decline in commodity prices enhances the export opportunities of the economy and increases the share of exports in the total demand of the population.

Other factors (of a non-price nature) cause the aggregate demand graph itself to shift to the right (increase in aggregate demand) or to the left (decrease in aggregate demand). The main factors causing these shifts are changes in personal consumption expenditures, changes in investment spending, changes in government policies, changes in exports and imports. These shifts are also referred to as shocks to aggregate demand.

Let us now turn to the analysis of aggregate supply. Aggregate supply (AS) is the total amount of the national product that is produced in the country at various price levels.

The graphical analysis of the AS curve is more complex than the study of the AD curve. It is important to immediately make a reservation that in the ranks of economists of the Keynesian and neoclassical schools there is no complete unanimity in determining the configuration of this curve (Figure 5.2).

Like market supply in microeconomics, aggregate supply in macroeconomics has a positive slope, since with an increase in the price level, producers in general will be inclined, other things being equal, to increase the supply of goods and services. However, unlike supply in a single market, aggregate supply in macroeconomics graphically has three distinct sections: the horizontal Keynesian section (1); intermediate ascending section (2); vertical classic section (3).

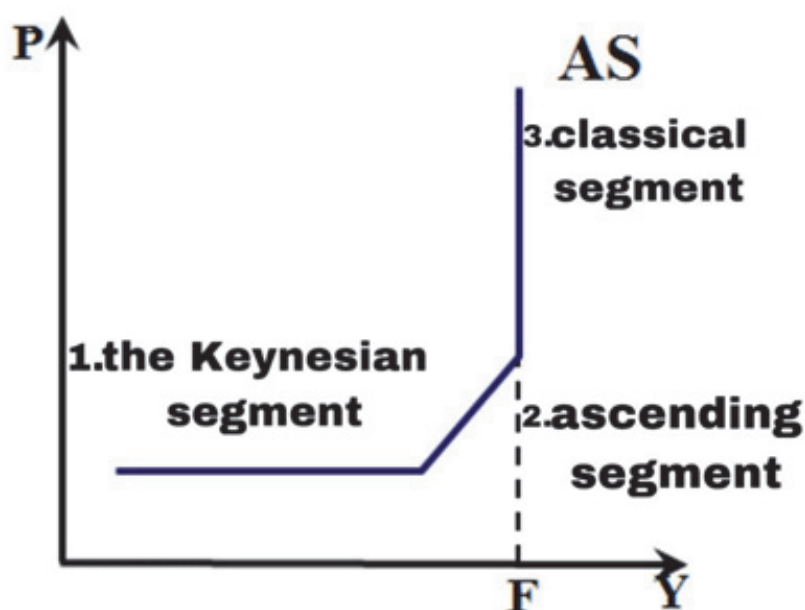


Figure 5.2. Aggregate supply curve

On an economy-wide scale, each segment characterizes three different situations: the Keynesian segment (1) - the state of underemployment; ascending segment (2) - a state approaching the level of full employment; classical segment (3) - the state of full employment. Full employment is the optimal employment of resources at a given level of economic development.

If a change in the price level causes a movement along the aggregate supply curve, then, as in the case of the aggregate demand curve, there are a number of non-price factors that cause the graph to shift to the right (increase in aggregate supply) or to the left (decrease in aggregate supply).

Shifts in AS will indicate a new level of costs per unit of output, therefore, both real output and the price level in the country will change.

## **2. Equilibrium of Aggregate Demand and Aggregate Supply in the AD-AS Model**

Graphically, macroeconomic equilibrium will mean the combination of AD and AS curves in one figure and their intersection at a certain point. The AD curve can intersect the AS curve on three segments already known to us: horizontal, intermediate or vertical. Each time this occurs, macroeconomic equilibrium arises, i.e. all manufactured product is fully purchased. However, these are three different equilibrium situations.

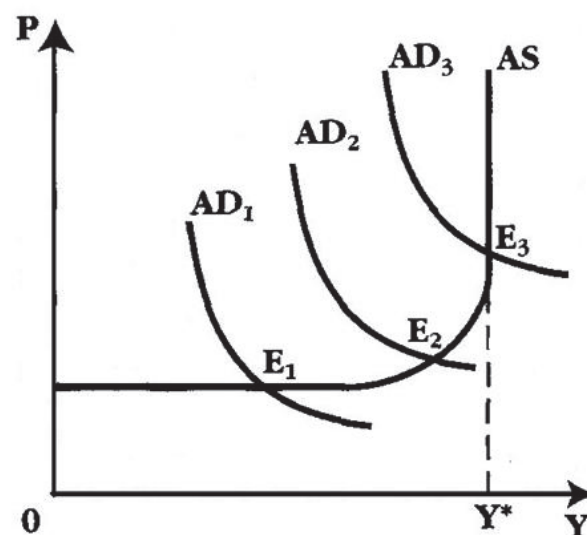


Figure 5.3. Macroeconomic equilibrium in the AD-AS model

According to the Keynesian approach, a depressed economy with an underutilization of all resources will respond to the expansion of aggregate demand with an increase in real GDP, but without an increase in the price level. The reason for the rigidity (constancy) of prices can be explained by the fact that in a depressed economy, the involvement of unemployed resources in production will not be accompanied by an increase in their prices.



The intermediate segment means that the economy is approaching the state of potential GDP (full employment of all resources) and the so-called “bottlenecks” begin to appear. In such a situation, in order to expand the volume of real GDP, it is necessary to increase the prices of production factors in order to involve additional resources in production, which will entail an increase in unit costs and an increase in the price level. In the intermediate section, it is also possible to increase aggregate demand, while there will be both an increase in the price level and an increase in real volume.

And, finally, the classical and neoclassical schools believe that the market mechanism, if the state does not intervene in its operation, in itself provides full employment. The economy is operating at a level corresponding to potential GDP. Therefore, “sliding” along segment 3 is accompanied only by a change in the price level, while real GDP does not change.

Comparing all three options for macroeconomic equilibrium, it should be noted that, when choosing the type of economic policy, it is necessary to clearly understand which part of the aggregate supply curve the country’s economy is located in, and, consequently, which school will be followed by the economic policy.

### ***Terms and definitions:***

**Aggregate demand** is the total volume of economic goods that economic agents are ready to purchase at various price levels; it is the sum of all expenditures on final goods and services produced in the economy.

**Aggregate supply** is the total amount of the national product that is produced in the country at different price levels.

**Keynes effect (interest rate effect)** is a sequence of events when the price level changes: an increase (decrease) in the price level → a decrease (increase) in real cash balances → an increase (decrease) in the interest rate → a decrease (increase) in demand for investment → a decrease (increase) in the national income.

**The Pigou effect (wealth effect)** is a sequence of events when the price level changes: an increase (decrease) in the price level → a decrease (increase) in real cash balances → an increase (decrease) in the marginal propensity to save → a decrease (increase) in household consumption → a decrease (growth) national income.

**The Mundell-Fleming effect (the foreign purchases effect)** is a sequence of events when the price level changes: an increase (decrease) in the price level for domestic goods → a relative decrease (increase) in the price level for imported goods → a decrease (increase) in net exports → a decrease (growth) national income.

**Macroeconomic equilibrium** is such a state of the economic system when has been achieved an overall balance, proportionality between the economic flows of goods, services and factors of production, income and expenses, supply and demand, material and financial flows, etc.

***Review questions:***

1. Definition and curve of aggregate demand.
2. Factors of aggregate demand.
3. Aggregate supply in the short and long term.
4. Non-price factors of change in the aggregate supply.
5. Demand shocks and supply shocks in the AD-AS model.
6. Macroeconomic equilibrium.

## **CHAPTER 6. CONSUMPTION, SAVINGS, INVESTMENTS: THE ISSUE OF BALANCE**

### **Chapter questions:**

1. Consumption and savings. Consumption concepts.
2. Demand for investment goods. The balance of investment and savings.

### **1. Consumption and savings. Consumption concepts**

Consumption is the largest component of GDP, therefore its analysis is extremely important to study the main macroeconomic interdependencies.

Keynes describes society's enduring propensity to consume by using the psychological law, according to which when total real income rises, so does total consumption, but not to the same extent as income rises—consumption lags behind income growth. Insufficient propensity to consume can cause aggregate demand to fall behind the level of full employment.

To measure the propensity to consume and save, indicators of the average and marginal propensity to consume and save are used.

The average propensity to consume (APC) is the ratio of consumption to income. The average propensity to save (APS) is the ratio of savings to income.

The marginal propensity to consume (MPC) is the ratio of the change in consumption to the change in income that caused it. The marginal propensity to save (MPS) is the ratio of the change in savings to the change in income that caused it. These values show what part of the additional income households are inclined to consume, and what part - to save.

In sum, the marginal propensity to consume and the marginal propensity to save are equal to one, which follows from their definition:

$$\Delta Y = \Delta C + \Delta S \quad (6.1)$$

then, dividing all the components of this equality by  $\Delta Y$ , we get:

$$1 = \text{MPC} + \text{MPS} \quad (6.2)$$

The basic psychological law is confirmed not only at the level of an individual household, but also at the macroeconomic level. As a result, consumption and saving functions and their graphs are built. Since these functions are interconnected, the graphs are located one below the other so that the connection between them is visible (Figure 6.1).

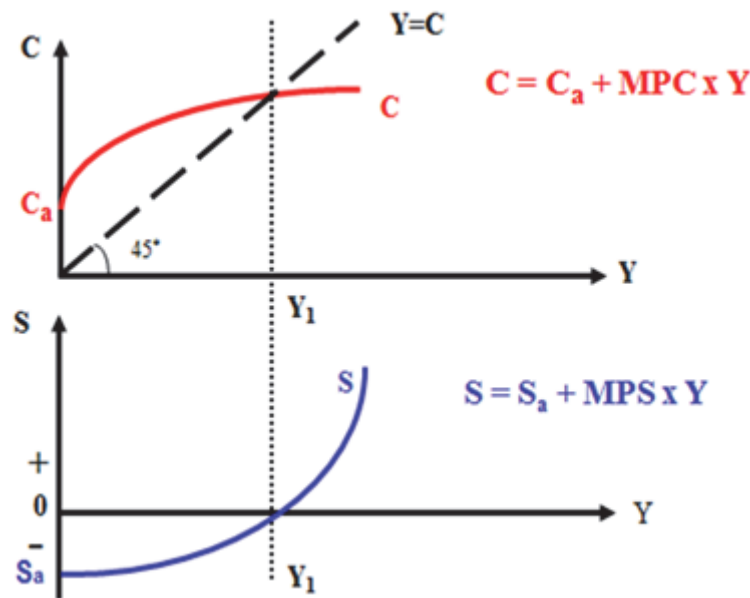


Figure 6.1. Keynesian consumption and savings

Let us analyze the construction of the graph of the consumption function. First, a line is drawn that emerges from the origin at an angle of  $45^\circ$ . This is an auxiliary line that shows what would happen if all income were completely consumed (it can also be called a line of zero savings). Then the line of consumption is drawn. It starts from a certain level of  $C_a$ , representing autonomous consumption. This is consumption determined by the subsistence level, i.e. regardless of the level of income, this consumption must be in society, otherwise society will perish. Negative consumption

cannot be by definition. Further, consumption becomes a derivative of income, and the schedule of consumption increases as income grows. However, due to the fact that consumption grows more slowly than income, consumption gains turn out to be less than income gains: the consumption schedule “closes”.

$Y_1$  is the only level of income at which all income is completely consumed (point of zero savings). To the left of this level, there is an income that is insufficient for this consumption - this is the area of negative savings, or life in debt. To the right is income, at which consumption is below its level and accumulation is formed, i.e. positive savings are generated.

The savings schedule is drawn taking into account the consumption schedule. We determine the point of zero savings, which is at the level  $Y_1$ . To the left of it is the area of negative savings, to the right is the area of positive savings. If consumption decreases relatively as income rises, then saving increases relatively: the graph “opens up”.

In the neoclassical concept, the relationship between the functions of consumption and savings is viewed differently. Interest dependence is taken into account - the higher is the interest, the more are savings and less is consumption.

## **2. Demand for investment goods.**

### **The balance of investment and savings**

Investments are types of tangible and intangible values invested in entrepreneurial and other activities to make a profit or achieve a social effect.

In macroeconomic analysis, investment is considered as a main component of aggregate demand. The source of investment is savings, so it is important to represent their relationship.

Produced national income is equal to the sum of consumption and savings:

$$Y = C + S \quad (6.3)$$

National income when it is used is equal to the sum of expenditures on consumption and investment:

$$Y = C + I \quad (6.4)$$

In order for the economy to have macroeconomic equilibrium, it is necessary to use the generated income fully, i.e. so that investments are equal to savings:

$$S = I \quad (6.5)$$

According to the classical school, the relationship between savings and investment can be represented as a capital market, where savings is the supply of capital, and investment is the demand for capital, while the price of capital is the interest rate, and the equilibrium between savings and investment is provided through the price mechanism, i.e. through the interest rate mechanism. Savings and investments are determined by the same value – the level of the interest rate  $r$ , therefore there is no problem of achieving the equilibrium between savings and investments:

$$S(r) = I(r) \quad (6.6)$$

According to Keynesian theory, the problem lies in the fact that savings and investments can be carried out by various economic agents who do not negotiate the amount of savings and investment in advance, i.e. potentially, there is a possible discrepancy between the desire to save and the desire to invest. From the Keynesians point of view, savings and investments depend on different values: investments, like the classics, are determined by the level of the interest rate, and savings depend on the level of income:

$$S(Y) = I(r) \quad (6.7)$$

This means that the equality of savings and investment is in question.

As you know, the government faces two main macroeconomic tasks that can be illustrated by the equilibrium model: to achieve macroeconomic equilibrium; while maintaining equilibrium, increase the level of equilibrium income. How this can be achieved is shown in a model called the “Keynesian cross” (Figure 6.2).

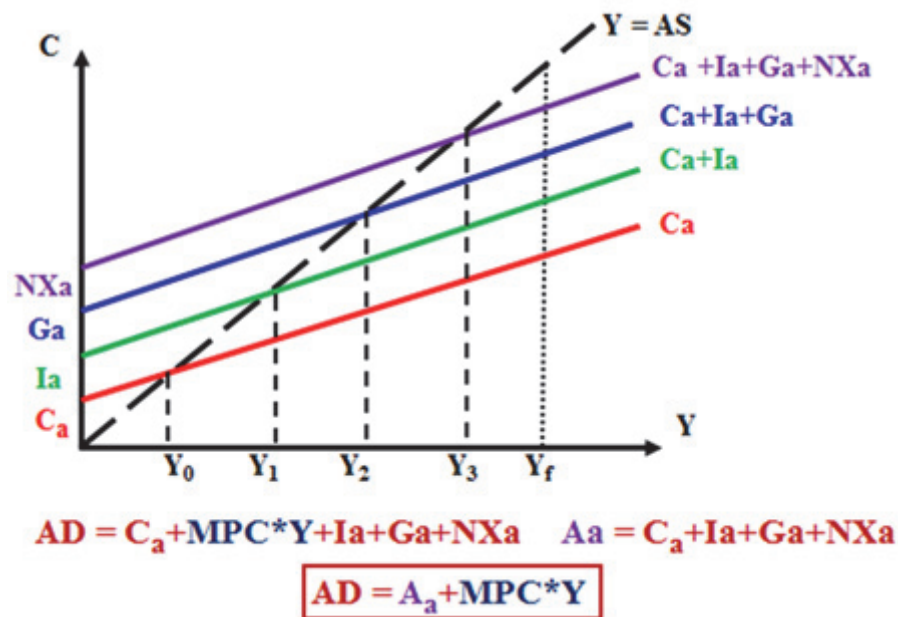


Figure 6.2. “Keynesian cross”

The schedule of total expenditures can be supplemented not only by consumer spending, but also by investment spending. The schedule of planned total expenditures is shifted upwards by the amount of autonomous investments. The equilibrium level of income rises. The more is autonomous investment, the higher the aggregate spending schedule rises and the closer is the level of full employment. If the state itself carries out autonomous expenditures, then the line of planned total expenditures will move up even higher. Adding net export spending to autonomous spending brings us even closer to full employment.

Thus, each addition of any element of autonomous expenditures will shift the line of total expenditures upwards and, taking into account all

elements of autonomous expenditures, aggregate demand can be represented as:

$$AD = C_a + MPC \cdot Y + I_a + G_a + NX_a \quad (6.8)$$

We denote the sum of all autonomous expenditures:

$$A_a = C_a + I_a + G_a + NX_a \quad (6.9)$$

Then,

$$AD = A_a + MPC \cdot Y \quad (6.10)$$

where  $MPC \cdot Y$  is the consumption function.

The relationship between savings, investment, interest rate and income level can be graphically represented using the IS model (investment - savings). The model was developed in the 1930s by English economist J. Hicks and supplemented in the 1950s by American economist E. Hansen.

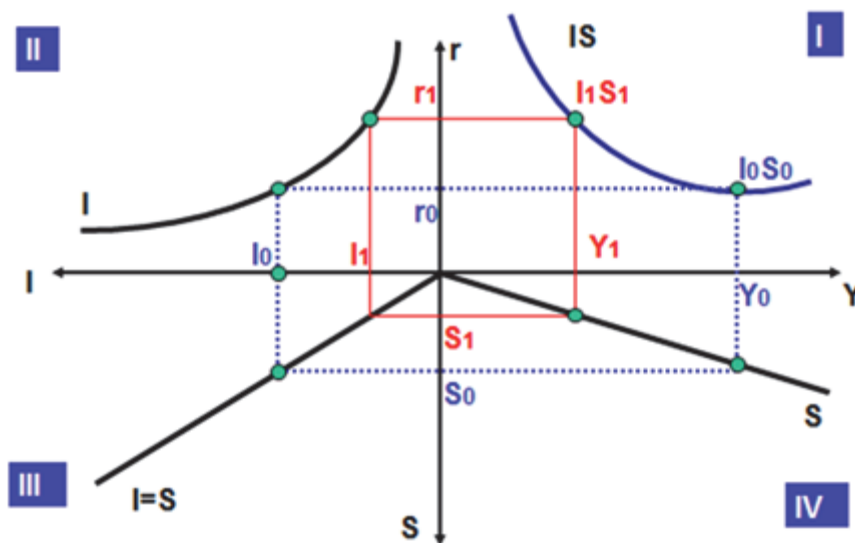


Figure 6.3. IS model



It shows the equilibrium in the real market, i.e. in the market for goods and services. The IS curve passes through points that reflect such a ratio of interest rate and income, at which the equilibrium condition is satisfied, i.e. savings equals investment (Figure 6.3).

An increase in investment leads to an increase in income. However, as practice shows, income grows more intensively than investment does. If investments grow by some amount, then in order to get an increase in income, it is necessary to multiply this amount by a certain number, called the multiplier. The multiplier is a coefficient that characterizes the measure of the increase in national income with an increase in autonomous expenditures of macroeconomic entities. The value of the multiplier depends on the marginal propensity to save:

$$k = 1 / \text{MPS} \quad (6.11)$$

The lower is the marginal propensity to save, the stronger is the multiplier effect. Since not only investment, but any component of autonomous expenditure (consumption, investment, government spending, net exports) can affect income in the same way, it is called the autonomous expenditure multiplier. So, the autonomous expenditure multiplier is the ratio of the change in equilibrium income to the change in any component of autonomous expenditure.

So far, we have been talking about autonomous investments, i.e. investments that do not depend on the level of income. Investments themselves were seen as a factor in income growth. But as income rises, investment opportunities increase, and then derivative investment appears. Derivative (induced) investments depend on the dynamics of national income. Superimposed on autonomous investments, they strengthen economic growth, accelerate it. This is expressed in the accelerator effect.

An accelerator is a coefficient indicating the quantitative ratio of the increase in investments of a given year to the increase in national income of the previous year:

$$A_I = \Delta I / \Delta Y \quad (6.12)$$

***Terms and definitions:***

**Consumption** is the use of a part of disposable income for the current purchase of short-term and durable goods, as well as services.

**Savings** are accumulating part of the income for later consumption.

**The marginal propensity to consume (MPC)** is the ratio of the change in consumption to the change in income that caused it.

**The marginal propensity to save (MPS)** is the ratio of the change in savings to the change in income that caused it.

**Investments** are types of tangible and intangible values invested in business and other activities to make a profit or achieve a social effect.

**The IS curve** is a set of points representing combinations of interest rates and national income at which, according to the Keynesian concept, equilibrium is reached in the goods market.

**Autonomous expenditure multiplier** is a coefficient that characterizes the measure of the increase in national income with an increase in autonomous (independent of the size of national income) expenditures of macroeconomic entities.

**Accelerator** is a coefficient indicating the quantitative ratio of the increase in investments of a given year to the increase in national income of the previous year; coefficient of incremental capital intensity of national income.

**The paradox of thrift** is the decline in national income produced as the volume of savings increases, according to Keynes concept.

***Review questions:***

1. Factors that determine consumption and savings.
2. Marginal propensity to consume and save in the Keynesian concept.
3. Average propensity to consume and average propensity to save.
4. Autonomous and derivative investments.
5. Inflationary and deflationary gap.
6. Essence of the transformation mechanism of household savings into investments of firms.
7. Model of total income and expenses ("Keynesian cross").
8. The investment-savings (IS) model.

## **CHAPTER 7. LABOR MARKET, EMPLOYMENT AND UNEMPLOYMENT**

### **Chapter questions:**

1. Economic activity of the population. Consequences of unemployment.
2. Interrelation of the unemployment rate with inflation rates.
3. Government impact on employment.

### **1. Economic activity of the population. Consequences of unemployment**

In macroeconomics, the labor market is linked to the categories of “employment” and “unemployment”, as well as to the impact of these categories on economic growth.

The able-bodied adult population is divided into several main categories depending on the position that it occupies in the labor market.

The able-bodied population is all those who, due to their age and health status, are able to work. It is determined by the age composition of the country’s citizens. Certain categories of the population are differentiated in accordance with employment in various sectors of the economy.

Persons who are not part of the labor force are defined into a special category. These include those who are unemployed but do not meet the job search requirement. There is also a category of people who really would like to work, but for one reason or another have refused to search - these are the so-called desperate to find a job. This category of people is not classified as unemployed, but as persons who are not part of the labor force.

Only the economically active population participates in the creation of the social product. The economically active population is also called the labor force of the country. The labor force (or economically active population) is represented by two groups of the population: the employed and the unemployed.

Employment is the activity of citizens associated with the satisfaction of personal and social needs, which does not contradict the law and, as a rule, brings them earnings, labor income.

Unemployment is the excess of the number of people who want to find a job (labor supply) over the number of available jobs that match the profile and qualifications of applicants for these jobs (labor demand).

The unemployment rate is defined in percent as the ratio of the number of the unemployed to the economically active population (or labor force).

According to the definition of the International Labor Organization (ILO), an unemployed person is a person who in the period under review did not have a job, was actively looking for it and is ready to start the work.

According to Russian legislation, the unemployed are able-bodied citizens who do not have a job and earnings, are registered with the employment service in order to find a suitable job and are ready to start it.

Using the unemployment rate indicator, you can visualize the state of the labor market in a particular country. However, this indicator is not able to most accurately characterize the macroeconomic situation under all conditions. The unemployment rate cannot be considered an absolute criterion of trouble in the economy. This is due to possible inaccuracies in its definition.

To analyze the dynamics of unemployment, not only the level (norm) value of unemployment is used. The time during which the average person is in a state of unemployment is the indicator of the unemployment duration.

Depending on the different duration of the period of unemployment, the following forms of unemployment are distinguished: frictional, structural and cyclical.

Frictional unemployment reflects the turnover of personnel associated with a change in jobs (change of residence, education, transition from a low-paid job to a higher-paid or interesting one). This form of unemployment is usually limited to short periods, is predominantly voluntary, and is considered inevitable. Its result is an increase in the well-being of citizens and a more rational distribution of labor resources.

Structural unemployment is associated with technological shifts in the economy, arises from a mismatch between the structure of supply and demand for labor. The structural unemployed cannot immediately get a job without retraining or changing their place of residence, so the structural form of unemployment is predominantly involuntary and long-term and is considered a more serious problem for the economy.

The combination of frictional and structural unemployment forms the level of natural unemployment corresponding to the potential volume of GDP or the situation of macroeconomic equilibrium. Natural unemployment represents the best labor reserve for the economy.

The natural unemployment rate is determined by averaging the actual unemployment rate in the country over the previous 10 years (or a longer period) and the next 10 years (forecast estimates are used taking into account the probabilistic dynamics of the expected inflation rate).

The natural rate of unemployment is periodically reviewed. This is due to a change in the demographic composition of the labor force, the entry of women into the labor market, as well as a significant expansion of unemployment compensation programs, which allowed the unemployed to be more relaxed and careful about finding a suitable job. Cyclical unemployment occurs due to a decline in production during an industrial crisis. To mitigate the negative consequences of this type of unemployment, it is necessary to develop and adopt special employment programs funded by the state.

## **Okun's law**

$$\frac{Y - Y^*}{Y^*} = -\beta(u - u^*)$$

- $Y$  — **actual production volume**
- $Y^*$  — **potential GDP**
- $u$  — **actual unemployment rate**
- $u^*$  — **natural unemployment rate**
- $\beta$  — **empirical coefficient of sensitivity of GDP to the dynamics of cyclical unemployment**

Figure 7.1. Okun's law

The main “cost” of unemployment is the unreleased product caused by it. The American economist Arthur Okun (1928-1980) mathematically expressed the relationship between the unemployment rate and the gap in GDP.

Okun’s law states that the excess of the actual unemployment rate by 1% over its natural level leads to a decrease in actual GDP compared to the potential (at full employment) GDP by  $\beta\%$  (on average by 2 – 3 %). The coefficient  $\beta$  is established empirically and is different in different countries.

## 2. Interrelation of the unemployment rate with inflation rates

One of the most famous ways to study inflation through the analysis of wage growth was proposed by the English economist A.W. Phillips. He studied the statistics on wages and unemployment in the UK for more than a hundred years, and found a clear relationship between them. The findings were presented graphically.

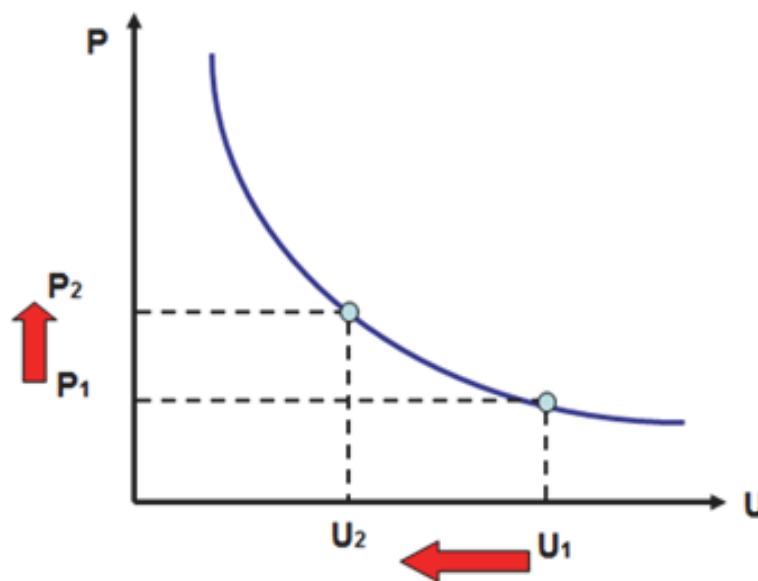


Figure 7.2. The Phillips curve

The Phillips Curve is a graphical representation of the relationship between the change rate in the price of labor and the unemployment rate. Later, the Phillips curve was modified and is currently used as a graphical

representation of the relationship between the inflation rate and the unemployment rate (Figure 7.2).

The graph shows that a decrease in the unemployment rate from  $U_1$  to  $U_2$  leads to an increase in the price level from  $P_1$  to  $P_2$ .

The economic alternative to inflation and unemployment was confirmed in practice until the early 1970s. However, then the simultaneous coexistence of inflation and unemployment began - a negative phenomenon called stagflation: simultaneous stagnation in production and inflation in the monetary sphere. In fact, stagflation is another name for the above-mentioned proposal inflation, or cost-push inflation.

The phenomenon of stagflation can be graphically illustrated in two ways: either by a right-sided shift of the Phillips curve, or by a left-sided shift of the aggregate supply curve.

In the short term, the Phillips curve reflects the patterns that have been considered, i.e. it can correctly illustrate the alternative between inflation and unemployment. However, in the long run, the Phillips curve becomes vertical, just as the aggregate supply curve becomes a vertical line in the long run. As a result, in the end, there is no alternative between inflation and unemployment, and all attempts by the government to lower unemployment only lead to a "sliding" of the Phillips curve upwards.

The hypothesis of the natural rate of unemployment (the hypothesis of M. Friedman) is developing in line with the classical school. Keynesians oppose it with their concept of hysteresis. Hysteresis (from the Greek "lagging") in the economy means the influence of past events on the natural values of economic variables in the long run; it is the consequences of individual macroeconomic measures that persist for a long time. In other words, a non-return to the natural level.

Unemployment hysteresis was characteristic of the UK economy in the 1980s. The fight against inflation raised the unemployment rate from 4% to 11% during the reign of M. Thatcher, but in the years that followed, unemployment did not return to its original level.

Nevertheless, despite such conflicting opinions regarding the natural level and the Phillips curve, this curve is widely used in theoretical constructions and in the practical field.

### **3. Government impact on employment**

In modern macroeconomic theory, there are various approaches to the regulation of employment. Traditionally, there are two main directions: neoclassical and Keynesian. The methods and tools developed within the framework of these schools to regulate the labor market are proposed to be widely used by both the developed countries and emerging economies.

Achieving a high level of employment is a main goal of the state's macroeconomic policy

The following types of impact on the employment level are distinguished. An active state policy provides for a set of legal, organizational and economic measures taken by the state in order to reduce the unemployment level in the country. Passive state policy is aimed at smoothing out the negative effects of unemployment.

An active employment policy includes: measures to create new jobs; training, retraining and professional development of the unemployed; active search and selection of suitable positions for the unemployed; subsidizing new jobs; organizing jobs for the unemployed through a system of public works; taking measures to prevent employees layoffs.

Passive policy involves the following: the payment of unemployment benefits; providing financial assistance to the unemployed; additional payments for dependents; the provision of low-income citizens with inexpensive essential goods; catering for the unemployed in special canteens.

#### ***Terms and definitions:***

**Employment** is the activity of citizens associated with the satisfaction of personal and social needs, which does not contradict the law and, as a rule, brings them earnings, labor income.



**Unemployment** is the excess of the number of people who want to find a job (labor supply) over the number of available jobs that correspond to the profile and qualifications of applicants for these jobs (labor demand).

**The unemployment rate** is defined in percent as the ratio of the number of the unemployed to the economically active population (or labor force).

**Frictional unemployment** reflects the turnover of personnel associated with a change in jobs.

**Structural unemployment** associated with technological shifts in the economy, occurs due to a mismatch between the structure of supply and demand for labor.

**The rate of natural unemployment** is a combination of frictional and structural unemployment; corresponds to the potential volume of GDP or the situation of macroeconomic equilibrium.

**Okun's law** is the excess of the actual unemployment rate by 1% over its natural level leads to a decrease in actual GDP compared to the potential (at full employment) GDP by  $\beta\%$  (on average by 2 -3%).

**The Phillips Curve** is a graphical representation of the relationship between the rate of change in the price of labor and the unemployment rate.

**The modified Phillips curve** is a graphical representation of the relationship between the inflation rate and the unemployment rate.

**Stagflation** is simultaneous stagnation in production and inflation in the monetary sphere; a state of economic conjuncture in which inflation is combined with an increase in the unemployment rate.

**Hysteresis** is the influence of past events on the natural values of economic variables in the long run; these are the consequences of individual macroeconomic measures that persist for a long time; return to natural level.

### ***Review questions:***

1. Socio-economic factors of the reproduction of labor resources and labor force.
2. Classical, Keynesian, neoclassical approaches to unemployment.

3. Causes of unemployment.
4. Types and forms of unemployment.
5. Positive and negative consequences of unemployment.
6. Okun's law.
7. The theory of the natural rate of unemployment.
8. Phillips curve and its interpretation.
9. Active and passive employment policy.

## CHAPTER 8. FINANCIAL MARKET

### Chapter questions:

1. Money circulation. Monetary system. Monetary aggregates.
2. The essence and structure of the financial market. Credit and crediting system.
3. The system of interest rates.
4. Essence, functions and structure of stock market.
5. Instruments of the securities market. Share price.
6. Stock exchange. Stock indices. Speculation on the stock market.

### 1. Money circulation. Monetary system. Monetary aggregates

Money is a prerequisite for the existence of finance. Money is a special commodity that acts as a universal equivalent. Money performs five functions.

**1. Measure of value.** Money enables us to express the value of goods and services in terms that everyone can understand. The value of a commodity in terms of money is its price. To measure the value of goods, it is necessary to take a certain amount of money as a unit. Such a unit is called a price scale. On the one hand, the scale of prices, like any measure (for example, length or weight), is conditional, and on the other hand, it must be recognized by everyone in the country.

**2. Medium of exchange.** Money serves as an intermediary in the exchange of goods. The exchange of goods is called commodity circulation. The movement of money is money circulation.

**3. Means of payment.** With the development of commodity circulation, the time for the sale of goods is increasingly separated from the time for their payment. This means that the goods are sold on credit or, conversely, on a prepaid basis. The functioning of money in isolation in time from the circulation of goods is the function of a means of payment. Money in this function acts as credit and electronic money,

**4. Means of savings or accumulation of treasures.** Money makes it possible to save part of the income received for the future, as it were, to conserve them until they are needed. Of course, for the same purpose, income can be used to buy some durable goods, such as houses, land and works of art. Experience shows that these goods never drop in price. However, it takes time to sell them and a lot of effort to find a buyer.

Money has an important advantage - it is absolutely liquid. In general, liquidity is the ease with which any property can be turned into cash.

**5. World money.** In this function, money is used in servicing international trade, transferring capital from one country to another, and creating foreign exchange reserves. Foreign exchange reserves are the official reserves of foreign currency intended for foreign economic and domestic operations. At the same time, the issue of the most stable currencies (dollar, euro, pound sterling) is a stable source of income for the world's largest powers.

*Money circulation* is the movement of money when performing their functions. Money circulation is carried out in two forms: cash and non-cash.

*Money* is circulated based on the monetary system existing in the country.

*The monetary system* is a legally fixed form of organization of monetary circulation, historically established in a given country.

*Money supply* is a combination of cash and non-cash means of payment.

*Monetary aggregates* are indicators of the structure of the money supply, types of money and funds that differ from each other in the degree of liquidity. Monetary aggregates are used to characterize the monetary system.

In Russia, the Central Bank calculates three aggregates: **M0**, **M1** and **M2**.

**M0** includes cash only.

**M1** includes aggregate **M0** and balances of funds on settlement, current and other demand accounts of the population, non-financial and

financial (except credit) organizations that are residents of the Russian Federation.

The indicator **M2** includes aggregate **M1**, as well as balances in the national currency on the accounts of time deposits and other funds attracted for a period of time from the population, non-financial and financial (except credit) organizations that are residents of the Russian Federation.

The US Federal Reserve System (FRS) defines eight monetary aggregates (only 2 are officially published). The European Central Bank defines three monetary aggregates.

A money surrogate is a substitute for money that performs part of their functions, such as a medium of exchange, payment, or savings.

## **2. The essence and structure of the financial market.**

### **Credit and crediting system**

The entire supply and demand for financial assets, which forms the financial market, can be divided into two markets: short-term loans and capital.

In the short-term credit market, the objects of sale and purchase are central bank money and money market securities: short-term bonds, bills of exchange, certificates of deposit and savings, banker's acceptances, etc. A common feature of all these financial instruments is that they satisfy the short-term need for liquidity.

In practice, the short-term loan market is also called the money market, but in the theoretical sense, it should not be identified with the money market.

**The essence of credit.** In modern economic literature, there are two main interpretations of the origin of the word "credit". Some economists believe that this concept originates from the Latin word credit, which means "he believes" (or from the word credo - I believe). Others associate its appearance with the Latin term "creditum", which translates as a loan (debt).

A loan is an economic relationship between a lender and a borrower regarding the return movement of value in commodity or monetary form.

The subjects of credit relations are the lender and the borrower. They can be any legally independent persons and capable citizens who are able to bear material responsibility for the obligations of a credit transaction.

The lender is the subject of credit relations, transferring the value for temporary use, and the borrower is the subject receiving the loan and obliged to repay it within the prescribed period. Within the framework of credit relations, they can change roles: the lender can become a borrower, and the borrower can become a lender. The current level of development of commodity-money relations is also characterized by the simultaneous functioning of entities as both creditors and borrowers. So, for example, banks at the same time throughout their activities are both creditors and borrowers.

The object of a credit transaction is the loaned value, that is, the value in cash or commodity form, which the lender transfers for temporary use to the borrower.

**Loan functions.** In modern conditions, credit performs three main functions: the accumulation of free cash, redistribution and replacement of cash by credit operations.

**The accumulation of funds** is one of the activities of commercial banks. Its essence lies in the fact that banks concentrate the so-called “free” money of depositors on their accounts and receive income by redistributing them. These finances are turned into capital, being provided as loans and used to purchase securities.

The purpose of the loan in the **redistributive function** is that with its help, temporarily free funds in cash or commodity form belonging to one economic entity are transferred for temporary use to other economic entities on terms of repayment, urgency and, as a rule, payment of reasonable interest.

The purpose of a loan in the function of **replacing cash with credit operations** is to create means of payment on its basis, the use of which leads

to savings in distribution costs. This function is associated with the specifics of the modern organization of money circulation, i.e. the predominance of non-cash forms of payment. Credit is provided mainly through banks. Placing and keeping money in a bank, the client thereby enters into a credit relationship with it and, in addition, creates conditions for replacing cash in circulation with credit operations in the form of bank account entries. It becomes possible to carry out non-cash payments and provide loans in a non-cash manner.

**Lending principles.** The main principles of lending include urgency and repayment, purposefulness, material security, payment of reasonable interest.

Urgency and repayment means that the loan provided to the borrower must be repaid within the period specified in the loan agreement.

The purposefulness of the loan, its purpose is determined, first of all, by the borrower, however, when allocating a loan, the bank also proceeds from its purpose, from a specific lending object, from a specific project. Compliance with the principle of the purposefulness of the loan ensures its repayment on time, as these periods are designed to perform certain business operations. The principle of material security of lending means that the borrower must implement the financed project, purchase those inventory items or pay the costs for which the loan was issued. However, in practice, often at the time of granting a loan, it is not opposed by specific inventory items, costs. Such loans, for example, are issued against future costs for the manufacture of products, the development of commercial activities, entrepreneurship, etc. Here, a pledge of property, a guarantee, a surety, an insurance certificate of liability insurance for non-repayment of loans, etc. can be accepted as security for the repayment of loans.

### **3. System of interest rates**

In macroeconomics, money is considered as a homogeneous good: one ruble is no different from another. However, transactions taking place in the

real money market differ from one another by terms and entities that carry them out. In this sense, many heterogeneous goods circulate in the real money market, each of which has its own price. This is how the system of interest rates comes about. When analyzing its structure, first of all, short-term and long-term interest rates are distinguished. Observations of market interest rates indicate that, as a rule, the long-term rate is higher than the short-term one.

The first theoretical substantiation of the noted relationship between the interest rates under consideration was given by the American economist I. Fisher. It is based on the assumption that the lender wants to receive the same income from a loan of a certain amount of money for a period of five years and from a loan of the same amount for one year with five annual renewals of the loan and recapitalization of interest. With this approach, short-term and long-term loans are treated as perfect substitutes, and the long-term interest rate acts as an average of short-term rates. In this case, the long-term interest rate will be higher than the short-term one as long as the latter is expected to rise in time. If the short-term rate is constant, the long-term rate is equal to it. If a decrease in the short-term interest rate is expected, then the long-term one will be lower than it is.

From the interpretation of the long-term interest rate as the average value of short-term rates, it follows that they change unidirectionally over time, but the long-term rate is more stable.

The disadvantage of this explanation of the ratio of short-term and long-term interest rates is to ignore the increased risk when providing a long-term loan.

J.M. Keynes explained the excess of the long-term interest rate ( $i_l$ ) over the short-term ( $i_c$ ) by the fact that the refusal of liquidity for a long time reduces the welfare of the creditor to a greater extent than the refusal for a short period; therefore, the price of a long-term loan is higher than the price of a short-term one.

Taking into account all the above circumstances, the difference  $i_l - i_c$  can be divided into three components:



- a) the change in the interest rate expected by the investor over time;
- b) a premium for an increased risk of unforeseen changes in the market conditions in the long run;
- c) a premium for a longer liquidity withdrawal.

Despite the fact that mentioned in "b" and "c" premiums are positive, the long-term interest rate may be lower than the short-term if investors expect a long-term decrease in the interest rate.

In addition to the time, the system of interest rates has a spatial structure: each segment of the money market has its own price. A change in the interest rate in one of the credit markets will entail an adjustment in the loan price in other markets:

$$i_S > i_T > i_d > i_B > i_h \quad (8.1)$$

where  $i_S$  - the interest rate at which commercial banks lend to the private sector in the bank loan market,

$i_T$  is the interest rate at which a commercial bank can borrow from another commercial bank,

$i_d$  - interest rate at which commercial banks can obtain a loan from the central bank at the refinancing rate,

$i_B$  - yield of government securities,

$i_h$  - the rate at which the population in the deposit market provides loans to commercial banks.

#### **4. Essence, functions and structure of the stock market**

The purpose of economic activity is to make a profit. One of the ways to achieve this goal is to invest capital in securities.

The system of economic relations regarding the issue and circulation of securities is a securities market (SM). The securities market is a part of the financial market that provides the ability to quickly transfer funds to various sectors of the economy and promote investment.

The economic role of the securities market is determined by the functions that securities perform in the process of circulation and economic use. The functions of the securities market can be divided into two groups: general market functions, usually inherent in each market, and specific functions that distinguish it from other markets.

**General functions include:**

1. *Commercial* - this is the function of making a profit from operations in this market.

2. *Price*, when the market provides the process of multiplying market prices and their constant movement.

3. *Informational*, when the market produces and communicates market information about the objects of trade and its subjects to its participants.

4. *Regulatory*, that is, the market creates the rules for trading and participation in it, the procedure for resolving disputes between participants, sets priorities, control bodies or even management, etc.

The specific functions of the securities market include several functions that emphasize the macroeconomic component of the influence of the securities market in the economic system. These functions include: redistributive, risk insurance, business promotion and allocative.

1. The leading function of the securities market is the **redistributive** function, expressed primarily in the accumulation of temporarily free cash resources and their redistribution in the industry, ensuring the highest return on investment.

2. The function of **risk insurance** is the use of securities market instruments (primarily in combination with derivative instruments) to protect the owners of any assets (commodity, currency, financial) from adverse changes in prices, value or profitability of these assets. This function is called the **hedging** function. Hedging is the reduction of the investor's financial risks by buying and/or selling financial instruments with opposite characteristics, or by buying and/or distribution of derivative financial instruments. However, hedging is not possible unilaterally: if there is someone who wants to insure against risk, then there must be someone who considers it possible for

him/herself to accept this risk. With the help of the securities market, one can try to shift the risk to a speculator willing to take risks.

3. A qualitatively important and, in a certain sense, unique function of the securities market is the function of **stimulating entrepreneurial activity**. The securities market creates conditions for a public assessment of a business, the degree of success in doing business, the quality of management, etc. The growth of business value becomes a significant motive for the behavior of firms, market capitalization - a criterion for business success, a product that can, at the request of the owner, be converted into a monetary form of wealth.

4. **Allocative** function means creating conditions for sustainable growth. This function of the securities market determines its strategic importance. The stock market at a certain stage of economic development is an inseparable part of the modern economic system. An economy with a developed stock market receives undeniable competitive advantages, which, *ceteris paribus*, allows maintaining sustainable economic growth and a high standard of living in the country. With the help of securities issued into circulation by the state, the current budget deficit is covered, its cash execution is ensured, and uneven receipts of tax payments are smoothed out.

The activity of the securities market can reduce the inflationary state of the economy. Directing part of consumer income for investment purposes and, thereby, reducing their excessive pressure on the consumer market, it contributes to the normalization of the proportions of consumption and accumulation in the general reproduction plan.

**SM structure.** The issuance of securities, called emission, takes place in the primary market, where the initial placement of securities among investors is carried out. The **secondary** market is the market where previously issued securities are traded. The secondary market can be organized (**exchange**) and unorganized (**over-the-counter**). Most of the securities (about 80%) are traded on the over-the-counter market. However, it is the stock exchange that determines the situation and the market value of securities.

## 5. Instruments of the securities market. Share price

Securities market instruments are various forms of financial obligations (for short-term and long-term investment) that are traded on the securities market.

From an economic point of view, the **security** is a form of existence of capital that circulates on the market as a commodity and brings income in the form of a dividend. A dividend is an income that a shareholder receives at the end of a financial year as a profit of a joint-stock company.

*The price of a share* is the monetary value of a share in the market. There are three types of it: nominal, balance (accounting) and market.

*The par value of a share* is a unit share of the authorized (share) capital (its part) of the joint-stock company that issued this share into circulation. The nominal price of a share is indicated when registering its issue.

*Accountable par share* is the amount of equity minus borrowed capital per share. This value assessment is necessary to analyze the investment attractiveness of the company's shares.

*The market price of a share* is the price at which a share is sold and bought on the stock market. If the amount of the dividend paid on the share is known, then the share price can be determined by the formula:

$$\text{Share Price} = \text{Dividend} * 100 / \text{Rate of Interest} \quad (8.2)$$

The share price may be higher or lower than the nominal price. The excess of the share price over its face value is called **agio**, the downward deviation of the rate is called **disagio**.

The market price of shares is determined by supply and demand for the SM. Demand is formed by **investors** that are organizations and citizens who have savings and are ready to use them to buy securities.

The offer on the SM is formed by **issuers**, i.e. organizations issuing securities. Issuers include the state, which issues state loan bonds, and joint-stock companies that issue shares and other securities.

There are intermediaries between investors and issuers at SM. These include investment banks - special financial institutions which place securities of issuers and act as a guarantor for obligations. Intermediaries also include exchange professionals - brokers, dealers, etc. There are also stockbrokers, courtiers, commission agents, stockbrokers, etc.

## **6. Stock exchange. Stock indices. Speculation on the stock market**

*The stock exchange* is an organized part of the SM, where operations are carried out by professional participants. The stock exchange sets the market price or stock price. The largest stock exchanges are New York, Tokyo and London.

*Stock indices* provide a general assessment of the state of the SM. They record changes in the stock prices of the largest corporations. The most famous is the **Dow Jones index** (developed in 1884 by Charles Dow and Edward Jones). This is the oldest index of exchange activity, currently includes stock quotes of the 30 largest US companies.

In Japan, the Nikkei index is calculated (of the shares of 225 companies).

In Russia, the main index is the RTS. It is a price index of the Russian stock market, which includes the most liquid shares of the largest and dynamically developing Russian issuers whose economic activities are related to the main sectors of the economy. The list of issuers and their weight in the index is reviewed quarterly.

**Speculation on the SM** refers to investing in securities to get rich quickly. Speculation on the SM, coming en masse, can have devastating consequences for the economy as a whole.

At the same time, speculation is an integral part of the securities market functioning and also has a positive meaning:

- 1) speculative aspirations force investors to invest in new and risky projects, which contributes to the scientific and technological progress;
- 2) speculation helps to increase the liquidity of securities;

3) speculation contributes to an additional increase in the investors' interest in securities and thus mobilize additional funds.

Thus, securities market speculation has both destructive and creative potential. The task of the state is not to prohibit speculation, but to control it, to limit the scale.

***Terms and definitions:***

**A share** is a security issued by a joint-stock company for circulation, which confirms that its owner has contributed a certain amount of money to the capital of this company and has the right to receive annual income from its profit and the right to participate in management.

**Broker** - an agent acting as an intermediary between sellers and buyers of securities; acts on behalf of its clients at their expense, receiving a fee or remuneration in the form of interest at the conclusion of the transaction.

**Monetary base** - the volume of debt obligations of the Central Bank; at any given moment it is divided into two parts: cash in circulation and the reserves of commercial banks in the Central Bank.

**Money supply** - the totality of all funds in cash and non-cash form.

**The monetary system** is a legally fixed form of monetary circulation, historically established in a given country.

**Money circulation** - the movement of money when performing their functions.

**Monetary aggregates** - money supply meters; arranged in descending order of liquidity.

**Dealer** acts in exchange operations on its own behalf and at its own expense.

**Investor** - a legal or natural person who invests his own borrowed or other attracted funds in investment projects.

**Quasi-money** is liquid deposits of the banking system that are not directly used as a means of payment.

**A loan** is a transaction between economic entities to provide money or property for use on terms of urgency, repayment and payment of reasonable interest.

**Credit system** - a set of credit relations, forms and methods of lending carried out by financial institutions.

**Liquidity** is the ability to quickly transfer an asset into cash without losing its value (or at minimal cost).

**The securities market** is a part of the financial market that provides the ability to quickly transfer funds to various sectors of the economy and promote investment.

**Velocity of money** is the ratio of total expenditures for a period to the amount of money in circulation.

**Securities** - specially designed financial instruments, certifying the ownership of its owner to any property or capital, loaned for the provided remuneration in the form of interest or dividend.

**Issue** - the process of issuing and distributing securities between the first owners.

**An issuer** is an organization that issues money and securities into circulation.

### ***Review questions:***

1. The relationship between the two parts of the financial market - the market for bank loans and the securities market.
2. Investment function of the securities market.
3. Real and fictitious capital.
4. Factors disturbing the equilibrium in the securities market.
5. Activities of intermediaries in the securities market.
6. The concept of the futures market and its role in the macroeconomic system.
7. The role of the stock exchange in the distribution of risks.

## CHAPTER 9. BUSINESS CYCLES

### Chapter questions:

1. The notion of business cycle. Phases of the business cycle. Business cycle indicators.
2. Types of business cycles. Long waves and technological structures.
3. Main forms of economic crises.

### 1. The notion of the business cycle. Phases of the business cycle.

#### Business cycle indicators

Cyclicity is a general form of movement, reflecting its unevenness. The market economy is characterized by uneven development. The reasons for the uneven economic development are studied by the theory of business cycles. The business cycle is a period of time during which the country's economy successively goes through 4 phases: economic boom, recession, trough, rise.

1. **Economic boom (peak).** The economy is working at its limit. Full employment, full loading of production capacities are observed. The level of consumer spending and investment, and hence aggregate demand (AD), is at its highest. Wage and interest rates also tend to rise.

2. **Recession.** For a number of reasons, consumers and businesses are beginning to reduce their consumption levels. Purchases of raw materials are reduced, there is an excess of production capacity. Production is curtailed. As a result, unemployment is rising. This further lowers the AD.

3. **The trough.** Production and employment are minimal. Companies are trying to get out of stagnation by reducing production costs. The renewal of fixed capital begins, the demand for it is growing, which stimulates the development of industries that produce means of production. Then the whole economy revives.

4. **Rise (recovery).** The demand for the products of industries that determine scientific and technical progress is growing sharply. Prices,



profits and wages are rising. The level of production and employment increase up to full capacity utilization and full employment, i.e. to economic peak. Then the phases of the cycle are repeated.

It should be borne in mind that, although economic cycles always have the same phases, the cycles differ from each other in intensity and duration. They are original in historical development.

## **2. Types of business cycles. Long waves and technological structures**

Economists distinguish three types of business cycles depending on their duration.

1. *Short-term cycles* (Kitchin cycles - in honor of the English economist and statistician Joseph Kitchin (late IXX - early XX century) lasting 3 – 4 years. Kitchin associated the causes of cycles with fluctuations in world gold reserves.

2. *Medium-term* - lasting 10 – 20 years (Juglar cycles - in honor of Clement Juglar - French physicist and economist of the 2nd half of the 19th century). Juglar believed that economic cycles are caused by banking activities. The medium-term also includes the so-called Kuznets swing (Simon Kuznets - American economist and statistician of the early twentieth century). Kuznets believed that oscillatory processes are associated with the periodic renewal of fixed assets and housing.

3. *Long-term cycles* – 48 – 55 years. They are named after the outstanding Russian and Soviet economist Nikolai Dmitrievich Kondratiev (1892 – 1938). In the 1920s, Kondratiev was the head of the Institute of Conjuncture. Using mathematical methods, he processed data on the most important indicators of the economies of England, France, Germany, and the USA and formulated the theory of long waves, being the first to predict the global crisis of 1929.

Large cycles (today they are called “Kondratiev waves”), according to the scientist, are born due to serious innovations in the economy (the introduction of major inventions, the emergence of a new group of countries

on the world market, etc.). He also noted the particularly depressing effect of downward phases on agriculture and established the enormous role of loan capital in the development of long-term cycles. At the same time, the change of downward and upward waves is usually accompanied by wars and political upheavals.

### 3. Main forms of economic crises

The boom-and-bust economy is characterized by recurring crises. The cyclical crisis manifests itself in the discrepancy between production and consumption.

If AD exceeds AS for a sufficiently long time, this is a **crisis of underproduction**. It is manifested in the shortage of goods. Crises of underproduction are caused by the following reasons:

1. **Economic:** shortcomings of planning in the administrative-command economy. For example, in the USSR, the production of consumer goods accounted for only 25%, while the rest accounted for industrial and military products. In 1990, the growth of the money supply in society was six times faster than the increase in GDP.

2. **Natural:** droughts, floods, bad crop.

3. **Social:** wars and political upheavals.

If AS exceeds AD, there is a **crisis of overproduction**.

**Structural crises** are crises in individual sectors of the economy. Structural crises are generated by disproportions between the development of individual spheres and industries, are, as a rule, of a protracted nature and do not always coincide with the onset of cyclical crises. Structural include energy European crisis (in the mid-1970s), financial crisis.

Economic crises have different causes and vary in duration and impact. However, it is possible to single out common features of economic crises: first of all, banks and credit institutions go bankrupt. Unemployment and bankruptcies of enterprises reach their maximum values. The turnover of cash is growing, securities are losing their value. The loan interest rise, prices rise (crisis of underproduction) or decrease (overproduction).

Economic populism is spreading, which leads to irrational spending of funds and distribution of national wealth. For example, in Turkey in 2018, when the Turkish lira collapsed, the authorities offered residents to sell their dollars out of patriotic feelings and not to think about the exchange rate anymore.” Another sign is the tightening of monetary policy. Before the economic crisis of 1929, the Fed raised the rate from 3.5% to 6%, which eventually led to the longest economic depression in US history. On the eve of 2000 (the crisis known as the “dot-com bubble”), the Fed also raised the rate - from 5% to 6,5%.

### ***Terms and definitions:***

**Phases of the economic cycle** - periods of the functioning of the economy, differing in the direction and degree of activity: crisis (recession), depression, recovery, rise (expansion).

**Cyclicity** is the movement of the national economy from one macroeconomic equilibrium to another.

**Exogenous theories** explain cyclical fluctuations by reasons that lie outside the economic system.

**The economic cycle** is the development of the economy between two phases of the economic cycle of the same name.

**Endogenous theories** explain cyclical fluctuations by reasons that lie within the economic system.

### ***Review questions:***

1. Relationship between the cyclical movement of the market economy and its growth and development.

2. The classical industrial cycle and its phases: crisis, depression, recovery, rise.

3. Contribution of N.D. Kondratiev to the theory of cyclical development of the economy.

4. Modern features of economic fluctuations. General and structural economic crises.

## CHAPTER 10. INFLATION. ANTI-INFLATION POLICY

### Chapter questions:

1. The essence and measurement of inflation.
2. Types of inflation.
3. Consequences and costs of inflation.
4. Options for anti-inflation policy.

### 1. The essence and measurement of inflation

In world economic science, it is believed that the ancient medical term “inflation”, meaning “swelling”, was first used in economic literature to characterize the monetary circulation of the United States during the civil war of 1861 – 1865. Initially, inflation meant any significant expansion of money circulation, whatever its consequences. Later, the emphasis shifted to rising prices and the depreciation of money due to their excess issue.

The most common modern definition of inflation is the overflow of the circulation channels of the money supply in excess of the needs of trade, which causes depreciation of the monetary unit and, accordingly, an increase in commodity prices. However, inflation should not be understood only as a rise in prices. Inflation is a complex multifactorial phenomenon.

Currently, there are three main theories of inflation - monetarist, Keynesian and Marxist.

**The monetarist theory of inflation** is based primarily on the quantity theory of money by the American economist Irving Fischer. According to Fischer’s theory, if there is a certain amount of money and goods on the market, then when there is an increase in the mass of goods, and the money supply remains unchanged, there is a decrease in prices - deflation. If there is an increase in the supply of money in the market, there is an increase in prices - inflation. Emission always initiates inflation, and not vice versa.

Modern monetarists, and above all supporters of Milton Friedman, the American economist, Nobel Prize winner, consider the only way to avoid inflation is the exact, without leading, movement of the money supply

following the growth of production. The main recipe against inflation is tight control over the money supply.

**The Keynesian theory of inflation** recognizes that the issue of money can generate inflation. However, Keynes did not agree that the relationship between emission and inflation is rigid. Between the moment of issue and the beginning of price growth, according to Keynes, there is a significant time lag, which always makes it possible to avoid inflation by increasing the supply of goods, if there are production possibilities for this. With incomplete utilization of production capacities, Keynes considered that there is more likely not the rise in prices, but an increase in production and supply of goods. In fact, according to Keynes, paper money can be secured by various unused production resources.

Keynes did not believe in the possibility of strict control over the issue of money. It is known that non-cash money can be multiplied in the accounts of commercial banks, and the ability of the state to control this process is limited. In part, control over bank multiplication of money could be exercised only through raising and lowering the discount rate (refinancing rate) of central banks. However, this method can cover only part of the money market.

Keynesians eventually came to the notion that the main cause of inflation is an increase in production costs - the so-called “cost-push inflation”. At this point, they came especially close to the Marxist theory.

**The Marxist theory of inflation** also recognized that the printing of money could generate inflation, but only under capitalism and not in every case. Under socialism, under conditions of state decreeing of prices, emission is a normal means of financing the economy. There is no rigid relationship between emission and prices.

The most important point of the Marxist theory of inflation was that the main responsibility for rising prices was assigned to private monopolies. If in the classical capitalism the growth of prices was restrained by competition, then in the monopoly capital this barrier to the growth of inflation disappeared. On this basis, Marxists considered the transition from private monopoly capital to state capital to be natural and historically inevitable.

Thus, different economic schools explain the emergence and development of inflation in different ways. It is possible to note the internal and external causes of inflation. An important role in the development of inflationary processes is played by external economic factors, which include:

- reduction of proceeds from foreign trade;
- negative balance of foreign trade and balance of payments;
- the global financial crisis and falling prices on the world energy market. Economic growth in Russia in recent years by 50-60% was based only on the constant growth of oil and gas export earnings. These revenues have declined sharply since the second half of 2008. This forced the government to pursue a policy of ruble devaluation. The weakening of the ruble against other currencies accelerates inflation.
- the food crisis that affects most of the world's countries and threatens food shortages for almost 1 billion people, according to World Bank estimates. This led to a sharp rise in food prices. Moreover, the rise in food prices outpaces the general rate of inflation.

Let us consider the *internal causes of the emergence and development of inflation* on the example of Russia. These include:

first, the lack of a free market and competition. The modern Russian market is, in fact, oligopolistic. There are also monopolies. Monopolies are able to strongly influence the monetary policy of the state and the rate of inflation. They have no competitors, they are able to dictate their prices.

secondly, the deformation of the national economic structure, expressed in a significant lag in science-intensive industries and consumer sectors, with the predominant development of the raw materials sector and the military-industrial complex.

thirdly, the investment backlog. This implies that part of the Russian capital structure, both private and public, is outdated and cannot be adequately replaced, which subsequently leads to strong inflationary pressures due to high costs and economic inefficiency. According to some estimates, this gap is 60-80% of GDP.

fourth, the current state of the Russian banking system. Due to the inability and unwillingness of banks to actively invest, investment process is carried out mainly at the expense of the companies' own funds. Increasing the rate of return is therefore the key to increasing investment, and this, in turn, has an additional inflationary impact. Increased competition would reduce the opportunity for businesses to raise prices. But then the opportunity to earn funds for investment would decrease.

These reasons determine in many respects the non-monetary nature of modern inflation.

So, inflation is a depreciation of money, a decrease in their purchasing power, an imbalance in supply and demand.

**Measurement of inflation.** Inflation, according to the monetarist theory of money, should be measured by the excess money supply in circulation. However, in practice this is difficult to do. Therefore, the measurement of inflation is reduced to theory of the definition of price indices.

The price index (I) is the ratio of the price of the t-th year ( $P_t$ ) to the price of the base year ( $P_b$ ), i.e.:

$$I = (P_t / P_b) \times 100\% \quad (10.1)$$

There are the following main types of price index:

- consumer price index,
- whole sale price index,
- price index – implicit GNP deflator,
- index of export and import prices.

The most commonly used indicator of the price level is the consumer price index – this is the ratio of the price of the consumer basket in the 1<sup>st</sup> year to its price in the base year. When calculating the consumer price index, not all final goods and services are taken into account, but only those that make up the so-called “consumer goods basket”, the composition of which is approved in Russia. This includes basic food products, a set of basic non-

food items (clothing, footwear, household goods) and basic services ('medical, transport services, communications, recreation, culture and personal hygiene).

The wholesale price index is a typical set of goods purchased by firms.

The price index calculated for a constant set of goods is called **the Laspeyres index** (Etienne Laspeyres – German economist and statistician of the 19<sup>th</sup> century). However, it does not take into account the possibility of replacing more expensive goods with cheaper ones, i.e. there is an underestimation of a possible change in the commodity structure.

An index calculated for a changing set, i.e. taking into account the possibility of mutual substitution of goods, is called **the Paasche index** (Hermann Paasche is a German economist, statistician and politician who lived at the turn of the 19<sup>th</sup> and 20<sup>th</sup> centuries). However, the Paasche index does not reflect the resulting decline in wealth.

**Fischer's formula** (Irving Fischer – an American economist of the late XIX – early XX centuries) eliminates the shortcomings of both indices. It is the geometric mean of the Laspeyres index and the Paasche index.

The analytical expression of the described indices is presented below:  
Price growth index according to *the Laspeyres formula* ( $I_L$ ):

$$I_L = (P_t \times Q_t) / (P_b \times Q_b) \quad (10.2)$$

*Paasche price growth index* or implicit GNP price deflator ( $I_P$ ):

$$I_P = (P_t \times Q_t) / (P_b \times Q_t) \quad (10.3)$$

Price growth index according to *the Fisher formula*:

$$I_F = \sqrt{I_L \times I_P} \quad (10.4)$$

where  $P_t$  – price of the t-th year,

$P_b$  – base year price,



$Q_t$  – the volume of products produced in the t-th year,

$Q_b$  – the volume of output produced in the base year.

The statistic gives us the rate of inflation:

$$N = [I_t - I_t - 1] \times 100\% \quad (10.5)$$

In 2018, for the first time in history, annual inflation in Russia was lower than in the United States. Annual growth of consumer prices in the USA as of the end of February was 2.21 %. The official value of inflation in the Russian Federation at the end of February was 2.2 %.

## 2. Types of inflation

In the economic literature, the following types of inflation are considered.

Depending on the “degree” of state regulation of the economy, anti-inflationary policy tools, inflation may be *explicit or hidden*. An explicit or open inflation is manifested in rising prices, depreciation of the national currency, etc.

Hidden inflation manifests itself in a decrease in product quality, changes in the structure of the product range, increasing the deficit in the economy, in the emergence of a “black” market with exorbitant prices, and in queues. A combination of these two types of inflation is also possible, i.e. a combination of a state budget deficit and a commodity deficit with a rapid rise in prices and a decline in real incomes of the population.

Depending on the object of study, *national, regional and world* inflation are distinguished. On a national and regional scale, the object of analysis is the dynamics of wholesale and retail prices, the GDP deflator in any country, in the level of the association of countries, in the international market.

Depending on the inflationary impulses in relation to the system, caused by internal and external factors, imported and exported inflation are

distinguished. If the country maintains a stable exchange rate, any increase in the price of imported goods will import inflation into the country. The significance of this factor in the development of the inflationary process in the country depends on the share of foreign trade in total GDP. The higher it is the greater is the “import” of inflation.

Depending on the rate of price growth, there are **normal, moderate (creeping), galloping and hyperinflation**. With normal inflation, prices rise slowly, about 3 – 3,5% per year, the scale of inflation is manageable.

With *moderate* inflation, price growth rates reach up to 10% per year; such inflation is recognized as relatively harmless and quite consistent with the normal economic development as a whole. Its scale does not lead to unforeseen disturbances, especially in the distribution of the national income between different social groups.

*Galloping* inflation is characterized by an increase in prices from 20 to 200% per year. Under these conditions, it is impossible to control the rise in prices as well as the process of economic development.

*Hyperinflation* begins when prices increase by more than 50% per month over a long period of time (six months or more); in a year, prices rise by at least 130 times, while money is being squeezed out of circulation, giving way to commodity barter. Wage spending and rising prices are becoming catastrophic, which affects the well-being of the population, even of the most well-to-do strata.

Depending on how successfully the economy adapts to the rate of price growth, inflation is divided into **balanced and unbalanced**. Under balanced inflation, prices rise relatively moderately and simultaneously for most goods and services. The Central Bank calculates the results of the average annual price growth and raises the interest rate. Thus, the situation is balanced as a situation with stable prices. Losses are incurred only by manufacturers of complex products, which are at the end of the technological chain. Unbalanced inflation means that the prices of various goods are constantly changing in relation to each other, and in different proportions. The rise in prices for raw materials exceeds the rise in prices

for final products, and the price of a component may be higher than the price of the final product. This type of inflation is dangerous for producers, since in such conditions it is impossible to forecast the price growth.

Depending on the ability of the state to influence the inflationary process, it is divided into **controlled and unmanaged**. In the first case, the state can slow down or accelerate the rate of price growth in the medium term. In the second case, there are no real sources for adjusting the inflation rate.

Depending on the accuracy of the forecast of economic agents regarding future price growth rates and the degree of adaptation to them, **projected and unpredictable** inflation are distinguished. Projected or anticipated inflation is predictable with a degree of reliability. Such inflation is often the result of government action. The anticipation factor allows, having a price growth forecast, to adapt to it. Even in the case of hyperinflation, the predicted rise in prices may cause less damage to economic entities than an unexpected price jump, even if by a small percent.

**Unpredictable or unanticipated** inflation is characterized by a sudden jump in prices, which negatively affects the circulation of money. A possible scenario for the development of this type of inflation is based on inflationary expectations of the population. If buyers have them, there is a sharp increase in demand, which deforms the economy.

There are two forms of inflation: demand-pull inflation and cost-push inflation. In demand-pull inflation, there is excess demand that pushes prices up. Demand-pull inflation is caused by the following factors:

- *militarization of the economy and the growth of military spending*. Military equipment is becoming less and less suitable for use in civilian relations and, as a result, the monetary equivalent that opposes it turns into a factor that is superfluous for circulation;

- *the state budget deficit and the growth of national debt*. Covering the budget deficit occurs mainly in two ways: by placing government loans on the money market or by supplementing issuance of non-changeable banknotes of the Central Bank;

- *credit expansion of banks*;

- *imported inflation, which raises the market price of imported consumer goods.*

Cost-push inflation refers to an increase in prices brought about by an increase in production costs in conditions of underutilization of production resources. An increase in unit costs reduces profits and the volume of output that firms are willing to offer at the current price level. As a result, the supply of goods and services decreases and prices increase. Consequently, costs drive up prices.

Cost-push inflation is characterized by the impact of the following factors on pricing:

- leadership in prices, i.e. orientation at the prices of leading companies;
- decreased growth in labor productivity and a decline in production;
- accelerating the growth of costs and especially wages per unit of output;
- the increased importance of the service sector. It is characterized, on the one hand, by a slower growth in labor productivity compared to the branches of material production, and, on the other hand, by a large share of wages in total production costs.

**Inflationary spiral.** An inflationary spiral results from a combination of unanticipated demand-pull inflation and cost-push inflation. An inflationary spiral is a process of interdependent rise in prices and wages, in which price increases necessitate wage increases, and wage increases lead to price increases.

### **3. Consequences and costs of inflation**

The first victims of inflation are consumers, who have to suffer from the inevitable decline in living standards. This takes different forms. One is the reduction in the real value of personal savings. If inflation is open, manifesting itself in a continuous general rise in prices, the worst thing is for those who keep savings in cash: each new inflation surge inexorably

reduces the volume of goods they can purchase. Shareholders are in a slightly better position, hoping for an increase in income, albeit inflationary. Those who managed to place their savings in real estate and items of values are damaged the least.

Production also suffers from inflation. As suppressed inflation increases, entrepreneurs and the workers themselves lose incentives to work. First, prices are not dictated by market mechanisms, but by directives indicating how much profit an entrepreneur should have, which, of course, does not stimulate the development of production and supply. Secondly, suppressed inflation leads to rationing and natural distribution. Since it is impossible to link norms with labor efficiency, various schemes of egalitarian distribution are practiced, and, consequently, economic interest disappears.

No less destructive effect has open inflation on production. Inflation, first of all, deforms the market mechanism, in particular, its central link – the system of free prices. The stronger inflation is, the more it affects demand and prices, the less they reflect real needs, their dynamics. This means that in an inflationary economy, prices no longer give the right signals to investment, they disorientate them.

Under open inflation, prices usually rise faster than incomes. Thus, for the entrepreneur who buys both labor and material resources, wage costs increase more slowly than the cost of acquiring capital goods. Therefore, it is often more profitable for him to keep obsolete and relatively cheap equipment in production than to replace it with new and increasingly expensive equipment. Under open inflation, production with a long payback period becomes completely unprofitable. This is due to the fact that with a long production cycle, the profit from the sold products is spent almost completely to purchase raw materials that have risen in price; of course, by purchasing raw materials that have risen in price, the entrepreneur will increase the price of the products, but inflation will again “eat up” most of the profits. In such a situation, it is difficult to plan the price of products, especially when the rate of inflation is uncontrollable. Added to this is the

effect of inflationary taxation. Finally, perhaps the most important harm of inflation is that uncontrolled inflation makes the entire national economy poorly managed.

When regulating a market economy, the state, as we know, relies mainly on indirect methods (taxes, subsidies, interest on a Central Bank loan, and others). The objects of influence are the monetary parameters of the economic activity of an enterprise, consumer, bank – income, profit, savings, etc. It is clear that such management can bring the desired results only if the monetary system is sufficiently stable. Destabilizing it, inflation automatically reduces the effectiveness of economic regulators, sometimes even makes their use inexpedient, pushes the state to use other administrative methods of influence. In other words, inflation devalues not only money, but the entire regulation system of the market economy. As for hyperinflation, it sometimes does not leave the state with any alternative, except for orientation towards command management.

**The cost of inflation.** The value of the costs is determined by the rate of inflation: the higher is the rate of inflation, the greater are the costs of inflation. The costs of inflation include:

Shoe leather costs are the transaction costs of inflation. Transaction costs are the costs of making a transaction. In this case, it is the cost of obtaining cash. Since inflation entails a tax on cash, to avoid this tax, people try to keep less cash on hand and either put it in a bank to earn some interest, or buy securities that generate income. When the price level rises, in order to withdraw money from the account, a person must go to the bank more often, spend money on travel or trample on shoes, going there on foot, waste time standing in line, and so on. In order to sell securities – stocks and bonds – and get cash, a person also has to spend time, find a broker (an intermediary of the securities market), and pay him/her a fee. In both cases, a person faces transaction costs – the costs of obtaining cash. The higher is the rate of inflation, the more often a person must conduct such transactions and therefore the higher is “shoe leather costs”.

**Menu costs** are the costs that sellers incur. When prices change, they must: firstly, frequently change price tags, price lists, reprint catalogs of their products, which is associated with printing costs; secondly, to bear the postage costs to distribute and advertise new prices; thirdly, bear the costs of making decisions about the new prices themselves. Rising inflation increases these costs.

**Inflation-induced tax distortions.** Inflation increases the tax burden on savings income, thus reducing the incentive to save, and therefore worsens the conditions and opportunities for economic growth.

**Confusion and inconvenience.** Money is the unit of account by which the value of all goods and services is measured. Just as distance is measured in meters, mass in kilograms, and temperature in degrees, cost is measured in monetary units (dollars, pounds sterling, rubles, etc.). The decrease in the purchasing power of money under inflation means that the size of the “economic measuring stick” is decreasing. For example, for one depreciated ruble, you can buy as many goods as before for 50 kopecks. The meter has halved. (This is equivalent to trying to measure the distance with a ruler that says “1 meter” but is really only 50 cm.) On the one hand, this makes transactions confusing, and on the other hand, it makes it difficult to calculate the profits of firms and therefore makes the choice in favor of investments more problematic and difficult.

The dependence of the nominal interest rate on the anticipated inflation rate at a constant real interest rate is called the Fisher effect (in honor of the famous American economist Irving Fisher, who first substantiated this dependence). The Fisher effect is formulated as follows: if the anticipated rate of inflation rises by 1 percentage point, then the nominal interest rate will also rise by 1 percentage point. So, if the creditor expects the inflation rate by the end of the period to be not 3, but 4%, then, wanting to receive a real income of 5% per annum, he will set the nominal interest rate not 8, but 9% ( $5 + 4$ ):

$$R = r + \pi^e \quad (10.6)$$

From the Fisher formula, you can get a formula for calculating the real interest rate:

$$R = R - \pi^e \quad (10.7)$$

where  $r$  - real rate %

$R$  - nominal rate %,

$\pi^e$  - inflation rate

#### 4. Options for anti-inflation policy

The negative social and economic consequences of inflation are forcing the governments of different countries to pursue certain economic policies. At the same time, first of all, economists are trying to find an answer to such an important question - to eliminate inflation through radical measures or to adapt to it. This dilemma in different countries is solved taking into account a whole range of specific circumstances. When assessing the nature of anti-inflationary policy, *two approaches* can be distinguished in it. As part of the first approach (it is being developed by representatives of **modern Keynesianism**), an active budget policy is envisaged - maneuvering public spending and taxes in order to influence effective demand.

With inflationary excess demand, the state limits its spending and raises taxes. As a result, demand decreases and inflation rates decrease. At the same time, production growth is also limited, which can lead to stagnation, crisis in the economy, the expansion of unemployment. This is the cost of curbing inflation to society.

Fiscal policy is also pursued to expand demand in a recession. If demand is insufficient, programs to increase government investment and other spending are implemented, and taxes are lowered. Low taxes are set, first of all, for recipients of medium and low incomes, who usually



immediately realize the benefits. It is believed that in this way the demand for consumer goods and services expands.

However, stimulating demand with budgetary funds, as the experience of many countries has shown, can increase inflation. In addition, large budget deficits limit the government's ability to maneuver taxes and spending.

The second approach is recommended by **Neoclassical economists**, who highlight monetary regulation, which indirectly and flexibly affects the economic situation. This type of regulation is carried out by the formally non-government controlled Central Bank, which changes the amount of money in circulation and interest rates, thus affecting the economy. In other words, these economists believe that the state should carry out deflationary measures to limit effective demand, since stimulating economic growth and artificially maintaining employment by reducing the natural rate of unemployment leads to a loss of control over inflation.

A set of anti-inflationary measures can be represented as follows. Long-term policy includes, firstly, the task of extinguishing inflationary expectations of the population, which are pumping up current demand. To do this, the government must pursue a clear and consistent anti-inflationary policy, thus gaining the trust of the population. It should contribute by its activities (stimulation of production, antimonopoly measures, price liberalization, weakening of administrative customs control, etc.) to the efficient functioning of the market, which will affect the change in consumer psychology.

Secondly, measures to reduce the budget deficit by raising taxes and reducing government spending.

Thirdly, measures in the field of monetary circulation, in particular, the establishment of strict limits on the annual increase in the money supply, which makes it possible to control the level of inflation.

Fourth, the weakening of the influence of external factors. In particular, the task is to reduce the inflationary impact of foreign capital inflows on the economy (with a positive balance of payments) in the form

of short-term government loans and borrowings abroad to finance the budget deficit.

The short-term policy is aimed at temporarily reducing the rate of inflation. Here, the result is successful if to expand aggregate supply without an increase in aggregate demand. To do this, the state provides allowances to enterprises that produce sidelines in addition to the main production. It can privatize some of its property and thus increase government revenues and ease its deficit problem, as well as lower inflationary demand by selling a large number of shares in new private enterprises. Massive imports of consumer goods contribute to the growth of supply. A decrease in current demand with a constant supply has a certain effect on inflation rates. This can be achieved by raising interest rates on deposits, which encourages higher savings rates.

In conclusion, it should be noted that the global economic crisis showed the inefficiency of the raw-material development model of the Russian economy, which was based on high world oil prices and, accordingly, additional export earnings. In addition, the financing of economic growth was possible due to the access of our banks and enterprises to relatively cheap credit resources in the global financial market. As a result, we have a low diversification of the economy, dependence on exports, and an underdeveloped domestic financial market.

Under these conditions, anti-inflationary policy in Russia should cover the following measures:

- change in structural policy in favor of knowledge-intensive industries, development of the service sector, support for small and medium-sized businesses;

- abandoning inflation targeting (setting targets for the monetary system, regulating the growth of the money supply, which the Central Bank adheres to in its policy) and ensuring lower interest rates in case of emerging problems with liquidity;

- the use of the budgetary mechanism to increase public investment in infrastructure, the development of basic technologies, subordinating these components to the need to create highly efficient vertically integrated

structures while ensuring such a level of economic diversification that would create and maintain the necessary competition.

It is impossible to overcome the negative consequences of inflation by means of financial manipulation only; it is only possible to reduce its manifestation without solving the problems of effective economic growth.

***Terms and definitions:***

**Inflation** is a complex multifactorial phenomenon that characterizes the violation of the reproductive process; it is the result of macroeconomic instability, an imbalance between aggregate demand and aggregate supply, which is inherent in the economy that uses paper money circulation.

**Cost-push inflation** is inflation whose primary source is an imbalance in aggregate supply.

**Demand-pull inflation** is inflation, the primary source of which is an increase in aggregate demand, most often due to an increase in the money supply.

**The Fisher effect** is a sequence of events when the price level changes: a decrease (increase) in the price level, a decrease (increase) in aggregate demand for two reasons:

- 1) a decrease (increase) in current household consumption due to the expectation of a further decrease (increase) in the price level;
- 2) redistribution of property from debtors to creditors (from creditors to debtors); Since the marginal propensity to consume is greater for debtors than for creditors, aggregate demand decreases (increases).

***Review questions:***

1. The notion, causes and factors of inflation development.
2. Quantitative characteristics of inflation.
3. Differences between moderate, galloping and hyperinflation.
4. Interrelation and interaction of demand-pull inflation and cost-push inflation.
5. Positive and negative economic consequences of inflation.
6. Classical and Keynesian views on anti-inflation policy.

## CHAPTER 11. THE ROLE OF THE STATE IN A MARKET ECONOMY

### Chapter questions:

1. The necessity and essence of state influence on the economy.
2. Economic functions of the state. Forms, methods, goals and instruments of state regulation of the economy.

### 1. The necessity and essence of state influence in the economy

The need for state regulation of the economy is primarily due to the shortcomings of the market mechanism, called market failures.

**Market failure** is the inability of the market system to produce certain goods at all or to produce them in optimal quantities.

Usually, there are four types of inefficient situations that indicate market “failures”:

1) **Monopoly**. Market power in the producer and seller leads to the fact that some goods are produced more than necessary, others - less. A monopoly maximizes profits by reducing production (thereby artificially increasing the demand for its product) and increasing prices. As a result, the market ceases to be efficient;

2) **Information asymmetry**, i.e. incomplete information among market participants. There are two types of information asymmetry - hidden characteristics and hidden actions.

*Hidden characteristics*. Manufacturers and sellers are always more aware of the characteristics of a product or service than buyers. Moreover, the characteristics of some goods cannot be assessed even in the process of their consumption.

*Hidden actions* are actions taken by a more informed participant in a transaction that a less informed participant cannot observe.

Information asymmetries create opportunities for abuse and risk of dishonest behavior and can lead to market fiasco;

3) **Externalities** are the indirect effects of the production or consumption of one good on the production or consumption of another good. There are negative and positive externalities. Environmental pollution due to railway construction is a negative externality. An example of a positive externality is the construction of an irrigation system by one farmer, which improves the land quality of other farmers without additional investment. Market failures occur when there is no payoff for a negative externality. There are different points of view on solving the problem of externalities and the participation of the state in this issue.

**A. Pigou**, an English economist, substantiated the tax way of resolving this issue, which implies the active role of the state in solving the problem of external effects.

**R. Coase**, an American economist, theorist of the neoclassical school, advocated the expansion of market relations to overcome external effects. R. Coase introduced the concept of transaction costs. These are costs associated not with production as such, but with the corresponding costs (search for information on prices, counterparties of business transactions, the costs of concluding a business contract, monitoring its execution, etc.). R. Coase believed that the regulation of external effects is most effective on the basis of private agreements between owners.

4) **Public goods** - these are the goods of joint consumption, which have the properties of non-excludability and non-rivalry, and the production price of which is always higher than the demand price. The concept of public goods was introduced in the middle of the 18th century by D. Hume, who pointed out such types of services, the production of which does not bring profit to individuals, however, in collective production, it can be useful for society as a whole. These are medicine, education, and road construction, science (traffic lights, street lighting, public transport). The market is not able to ensure the production of public goods, but no society can do without them.

Thus, market failures necessitate government regulation. State regulation of the economy is a system of economic measures aimed at achieving the goals of socio-economic development.

Today, the state eliminates the negative socio-economic consequences of market imperfections, creates conditions that ensure the functioning of the national economy as a whole. At the same time, its intervention in the economy should be limited. The boundary, the limit of state regulation of the economy is the efficiency of the market economy as a system. Crossing this line can cause the disappearance of economic incentives that ensure the effective functioning of the market mechanism. Excessive participation of the state in the economy, the performance of unusual functions contributes to the nationalization of the economy, changing the economic system.

## **2. Economic functions of the state. Forms, methods, goals and instruments of state regulation of the economy**

*State regulation* of the economy aims to achieve the following goals:

- creating normal conditions for the functioning of the market mechanism;
- ensuring sustainable growth rates;
- regulating structural changes in the economy caused by the needs of the modern scientific and technological revolution;
- ensuring social stability and social progress;
- solving environmental problems.

*State functions.* An important function of the state in the modern economy is to create a legal basis for economic activity. It is reduced to the development of legislative and regulatory documents that control the functioning of the economy as a whole, its individual subjects. At the same time, the state is obliged to control the implementation of established legislative and regulatory documents.

*The creation of public goods* is another important area of state regulation of the economy. Together with it, the state can guarantee only such a level of consumption of public goods that the resources of the state budget allow at a given time. World practice shows that the market is characterized by a tendency to monopolization, which leads to undermining

the foundations of free competition, the power of producers over consumers, and as a result, to stagnation.

**The antimonopoly policy** aimed at combating monopolism and protecting the principles of free competition can only be pursued by the state. To achieve this goal, the state relies on antitrust laws.

*Creating the infrastructure of the economy* is another important area of state regulation of the economy. An efficient economy requires an appropriate infrastructure - a complex of organizations that provide the conditions for reproduction. There are several types of infrastructure:

- production (network of power supply, transport and communication);
- institutional (state administration apparatus);
- social (educational, medical, cultural institutions);
- informational (a set of information channels and storages, information technologies).

*The redistribution of income* is the withdrawal of part of the income from some persons in order to transfer them to other persons or the voluntary transfer of income by some persons to others who need them more. The market economy is characterized by uneven, cyclical development, which is accompanied by the loss of jobs, the stratification of the population by income. The state assumes the function of paying benefits to the unemployed, families with children, the disabled and other groups of the population in need of social assistance. The state supports social programs that ensure the accessibility of the population to education, healthcare, culture, physical culture and sports.

The state in a socially oriented market economy also performs such a necessary function as *macroeconomic stabilization of the economy*. This measure of state regulation is aimed at preventing and slowing down the economic downturn, consolidating and maintaining the performance of the economy at a certain level, and improving the economy. Macroeconomic stabilization is achieved mainly through fiscal and monetary policy. The main measures aimed at achieving macroeconomic stabilization include: changes in government spending, taxes, etc.

*The state regulates* not only domestic but also foreign economic activity. Each state seeks to create favorable external conditions for the national economy development. Guided by specific national interests, the state pursues either a policy of liberalization or protectionism. State regulation of the external environment takes place with the help of a set of measures that can be divided into customs tariffs and non-tariff regulatory measures.

One of the functions of the state in a socially oriented market economy is the *support of fundamental science*, the implementation of a common scientific, technical and innovation policy. In the USA, for example, the state finances more than half of fundamental research, almost entire of the most complex and expensive facilities for fundamental science. The state is especially active in financing research and development related to military production.

*Ensuring environmental safety* is an important function of the state in a social market economy. The second half of the 20th century showed that the extensive development of the economy is accompanied by a number of negative consequences. One of them is the destruction of ecosystems, the loss of part of the GDP.

The total damage caused to the environment as a result of economic activity, for example, in European countries is estimated at 3-5% of GDP. Such losses result in negative economic, financial and social consequences. They can be eliminated either by slowing down the pace of economic development, or by implementing a set of measures to green production.

For the modern economy, the second way is acceptable. It is implemented by the state. It organizes a system of control, evaluation and monitoring of changes in the environment under the influence of anthropogenic impacts. The state is creating a network of fixed observation stations, with the help of the power of aerospace means of control over changes in parameters characterizing the condition of the environment. The state, through laws and tax policy, conducts operational management of environmental protection, forcing entrepreneurs to comply with



environmental measures. The state governs the exploitation of natural resources, establishes bans and restrictions on the production of certain products, administrative sanctions for violation of environmental legislation, environmental standards.

***Terms and definitions:***

**State regulation of the economy** is a system of legislative, executive and supervisory measures, taken by authorized state institutions and public organizations in order to stabilize and adapt the existing socio-economic system to changing conditions.

**Objects of state regulation** are spheres, industries, regions, as well as situations, phenomena and conditions of the socio-economic life of the country where difficulties have arisen or may arise, problems that cannot be resolved in the distant future, while the removal of these problems is imperative for normal functioning economy and maintaining social stability.

**Market failure** is the inability of the market system to produce certain goods at all or to produce them in optimal quantities.

***Review questions:***

1. Limits of state intervention in the economy.
2. Economic functions of the state.
3. Subjects and objects of state regulation.
4. The system of goals of macroeconomic regulation and their conflict.

## CHAPTER 12. THE PUBLIC GOODS

### Chapter questions:

1. Public goods: essence, criteria, classification.
2. Problems of producing public goods

### 1. Public goods: essence, criteria, classification

A most important function of state regulation of the economy is the production of public goods. State revenues and expenditures should correspond as closely as possible to the needs of citizens for specific public goods and purposefully used to meet these needs. Understanding the characteristics of public goods, the ability to recognize them, to find the best options for providing them to consumers and analyze the possibility of replacing public goods with private ones, as well as the ability to compare budgets at all levels with real demand and the actual supply of public goods are fundamentally significant to substantiate the socio-economic policy of the state.

*Public goods* are the goods of joint consumption, possessing to some extent the properties of non-rivalry and non-excludability, and the demand price for which is always less than the supply price.

#### **Properties of public goods.**

*Non-rivalry (non-competitiveness)* in consumption means that an additional unit of public goods that has become available to one consumer is equally available to another consumer, i.e. the consumption of these goods does not decrease with the advent of new citizens of the country. It also means that the public good is indivisible and cannot be sold individually. Examples: national defense or satellite weather service.

*Non-rivalry* is, in fact, an extreme case of a positive externality. Many people jointly and simultaneously enjoy protection from fires and military attack, and it is impossible to tell which of them is the “primary” recipient of the service, and who gets the external effect. The number of users can grow with a stable level of production of public goods. For example, there

is no need to build an additional lighthouse next to the one built earlier if the number of ships passing by the place where the latter is located increases. Thus, the marginal cost of providing a public good to an individual consumer is zero, and the addition of an additional consumer is a Pareto improvement. Consequently, non-rivalry gives rise to situations unusual for a market economy: if there is an individual who wants to use a good, but is not ready to pay for it, the optimal use of resources involves giving him this good for free.

*The non-excludability of public goods* means that the consumption of a good by one person does not exclude from the consumption of other individuals. Non-excludability means that the producer has no real choice whether to provide the good only to those who pay for it or to everyone. More precisely, the nature of the good does not prevent its consumption by an individual who does not fulfill the requirements that the supplier makes or would like to make (for example, an individual who violates the terms of the transaction or does not enter into it at all). Sanctions against non-payers would have turned out to be detrimental to conscientious users, and possible Pareto improvements would not have been realized. Such benefits are delivered to communities of people in which individuals seem to dissolve, acting only as representatives of a particular group. As a result, the provider of a public good is not able to isolate its relationship with each of the consumers separately.

There are technical impossibility and economic inexpediency of excluding public goods. For example, national defense cannot be organized only for some citizens and exclude others.

For some public goods, it is technically possible to implement exclusivity, but it is not economically feasible, because the costs will be too high. For example, a recreational park.

The properties of public goods are intrinsically interconnected. Apparently, all non-excludable goods produced by people are characterized at the same time by non-rivalry in consumption (at least within certain limits). Otherwise, these would be goods, the consumption of which would be purely individual, but at the same time would not lend itself to any

ordering, whether on the basis of payment, queue, rationing, or otherwise. Even if such a commodity could be invented, no real economy would create incentives for its production. At the same time, the stronger non-rivalry is expressed, the more likely non-excludability is, other things being equal.

**Pure and mixed public goods.** It is practically impossible for public goods to reach the boundaries of non-rivalry and exclude the individual from the number of consumers. This means that exclusion and rivalry can in principle be conceivable, but either are incompatible with the specific conditions of life of the community in which the good is produced and consumed, or involve unacceptably high costs.

Indeed, only for very few goods, such as, for example, legislation or strategic nuclear weapons, the number of individuals who benefit from their presence can increase almost indefinitely without additional costs, and restricting access to these benefits, if feasible, is for entire groups (for example, in the case of discriminatory legislation), but not for individual personally. Note that in relation to such goods that have the properties of public in the absolute sense, that is, without regard to any limits, it can be stated quite unconditionally that they are not divisible into elements that are private goods. In practice, somewhat different situations are more common.

So, scientific knowledge, like legislation, can be used by an unlimited number of individuals, in other words, generally speaking, they have the property of non-rivalry. However, there are mechanisms to restrict access to them, in particular through patent law preventing non-excludability. It is important to emphasize that if access is restricted, the public good is more or less transformed into a “bundle” of private ones, which, in turn, contravenes non-rivalry.

If a scientific achievement is publicly available, those who are familiar with it are practically not harmed by introducing new people to it. But the very fact of introducing restrictions significantly changes the position of those who have access to the good, and the effect of individual commercial use of a scientific discovery depends significantly on the number of users competing with each other. Of course, the commercial effect of monopoly ownership of knowledge is not identical to the benefit from this knowledge

for an individual when it is generally available. Modern society is characterized by a consensus that restricting access to fundamental knowledge is practically unacceptable, although it is possible in principle, as evidenced, for example, by the history of the development of physics during the invention of nuclear weapons. At the same time, there is agreement that the results of applied development should be treated as private goods. Between these poles, there is a range of intermediate options with varying degrees of practical non-excludability.

Non-rivalry can also be relative. Thus, with high vehicle density, roads and bridges do not have this property, and, as a rule, it is advisable to use them, regulating access with the help of tolls. In these cases, there is an analogy with the theater hall or the cabin of an airliner. However, on a lightly or irregularly loaded section of the track, non-rivalry occurs constantly or at least sporadically. Accordingly, even minimal access restrictions, for example, the introduction of a low fee, can prevent some Pareto improvements. At the same time, there is no reason to believe that the construction of bridges is justified only on highways with heavy traffic. Between the polar situations of absolute non-rivalry, on the one hand, and the trivial reduction of a jointly consumed good to a strictly limited “bundle” of private ones, on the other hand, there is also a whole range of intermediate options.

For example, maintaining strict equality between supply and demand may be technically achievable but involves exceptionally high price volatility. In practice, in transport, in places of recreation, etc. at best, two or three price gradations are introduced according to seasons, days of the week or hours of the day; as a result, overloads of various scales alternate with underutilization of resources, in other words, the boundaries of the mentioned “bundles” seem to be blurred. This can be avoided by spending effort and money on accurately forecasting fluctuations in demand and the corresponding equilibrium prices, as well as introducing multiple types of tickets, complicating control, and so on.

So, with regard to many goods suitable for joint consumption within wide, but finite limits, the problem of choice arises: either to provide them as public, opening up free access for everyone, or to introduce stable,

average prices that do not allow maintaining the optimal load, or and, finally, to increase transaction costs, achieving strict correspondence of prices to fluctuating demand with supply fixed at the level of non-rivalry boundaries. All three options are fraught with losses in efficiency, and the question of which one provides the best allocation of resources can only be decided in relation to specific circumstances.

The importance of transaction costs is even clearer when it comes to non-excludability. Restricting access always comes at a cost. A huge part of the costs of circulation is justified precisely because it prevents the free appropriation of goods. If the good allows for joint consumption, and the actual number of users is far from the maximum possible, the introduction of payment is undesirable. After all, it not only prevents the expansion of consumption at zero marginal cost, but must itself be provided with resources, which means it increases average costs.

It can be concluded that different public goods are unequally attributed with non-rivalry in consumption and non-excludability. Those that have both properties to a high degree are called pure public goods. Those in which at least one of the properties is expressed to a moderate degree are called mixed public goods.

Mixed benefits are shared consumption goods with alternative uses and decreasing consumption. A mixed benefit can be an object of sale and purchase.

Of course, it is impossible, to draw a strict line between the two. However, the difference between them is practically significant, since pure public goods roughly correspond to the minimum possible boundaries of the public sector, while the mixed public benefits give an idea of the permissible limits to expand this sector and serves as an arena for its competition with the private sector.

Some public goods are available simultaneously to the whole nation, while others are consumed by residents of a particular region, city, etc. Public goods belonging to the latter category are usually called local.

Public goods are also called collective goods. The latter term is especially often used when it comes to benefits that are consumed by a

relatively small group. Such goods are characterized by relatively narrow boundaries of non-rivalry, and non-excludability, by definition, does not extend to those who are not in the group.

In order to enjoy many collective benefits, one must first gain access to the relevant community, that is, overcome some restrictions, for example, by paying a fee or proving one's right to belong to a specific group. However, within the framework of a given community, a benefit may have the properties of a public good for those who belong to this community. For example, the size of the club's living rooms, library, and sports grounds may ensure that its members do not compete in the consumption of collective goods. It is often practically impossible (for technical, economic, or even ethical reasons) to exclude an individual belonging to a community from being a user of any of the specific benefits provided to its other members. As a result, the same situations and problems are reproduced, albeit in miniature, that, when it comes to pure public goods, affect the whole society.

## **2. Problems of producing public goods**

The consumption of public goods occurs collectively, but the individual benefit from this consumption is different. This situation presupposes availability of accurate information about the marginal benefits of each person. However, in reality, the availability of such information is a rarity.

If payment for public goods is made in accordance with the marginal benefits of their use, there are powerful incentives to hide the truth and underestimate the real benefits received. Indeed, since consumers benefit from a public good, whether they pay for it or not, there is a desire to do without extra payments, to get this good free. This situation is called the “free rider” problem.

The free rider problem occurs more often in large than in smaller groups of consumers, since it is more difficult to obtain the necessary information about the situation of payers there. As a result of the free rider problem, the production of purely public goods is less than efficient.

Thus, the need for pure public goods poses two problems for the economy: how to achieve an economically efficient production of such goods and how to ensure their production in the presence of free riders.

**The effective output of a consumer good** is determined by comparing the marginal gain from producing an additional good with the marginal cost of producing that good. Efficiency is achieved when marginal gain and marginal cost are equal. The same principle applies to public goods, but the analysis method is different. For consumer goods, marginal gain is measured by the benefit received by the consumer. In considering public goods, we must answer the question of how each person values an additional unit of output. The marginal gain is obtained by adding these scores for all the people who use the product. To achieve efficient use of resources, a public good must be produced in such a volume that, according to the usual rule of making optimal economic decisions, the marginal benefit from the consumption of the good is equal to the marginal cost of producing this good.

Thus, there is some unambiguously determined optimal amount of the public good, which provides the greatest efficiency in the use of resources. It can be determined by the formula:

$$MSB(QS) - MC(QS) \quad (12.1)$$

where  $MSB(QS)$  is the marginal social benefit from the consumption of this public good in the amount of  $QS$ ,

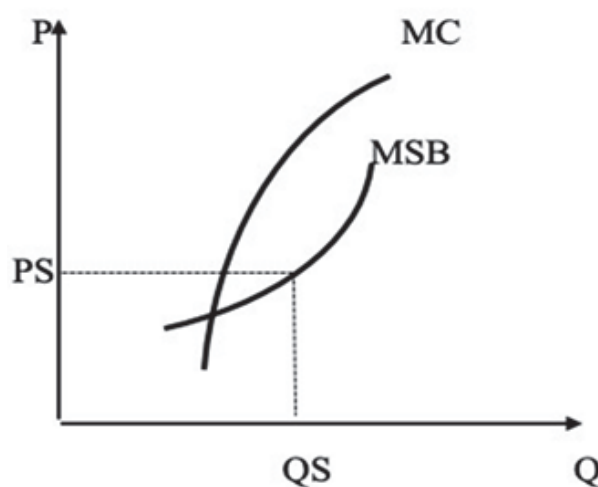


Figure 12.1. Optimal production of a public good



MS (QS) - marginal costs of production and providing consumers with data about a public good in the amount of QS (Figure 12.1).

Thus, for the efficient allocation of goods in the economy, a given public good must be produced in such a volume that the marginal social benefit from consuming a given volume becomes equal to the marginal cost of producing an additional amount of this good to the total output QS. In other words, a given public good must be produced up to such a quantity QS, until the public (or total) willingness to pay for this quantity (in the amount of PS) becomes equal to the marginal cost of issuing this quantity of this good (in the amount of MC (QS)). To determine this volume, it is necessary to know exactly the public preferences in relation to the public good.

***Terms and definitions:***

**Public goods** are the goods of joint consumption, possessing to some extent the properties of non-rivalry and non-excludability, and the demand price for which is always less than the supply price.

**The “free rider” problem** is the difficulty of implementing mutually beneficial collective actions due to the possibility for economic agents to receive benefits without participating in common costs.

**Mixed benefits** - the benefits of joint consumption with the alternative of their use and decreasing consumption.

***Review questions:***

1. The need for the production of public goods.
2. Differences between public and private goods.
3. Properties of public goods.

## CHAPTER 13. PUBLIC CHOICE THEORY

### Chapter questions:

1. Public choice in the economy
2. Direct and representative democracy.
3. Imperfection of public choice. State failures

### 1. Public choice in the economy

The mechanism of decision-making in the public sector is studied by **public choice theory (PCT)**.

As an independent field, this theory was formed in the late 1960s based on a fusion of economic theory and political science. One of the founders of PCT is James Buchanan: "Public choice is the view of politics that emerges from extending the economist's tools and methods on to collective or non-market decisions."

In this regard, PCT has another name - the new political economy.

Among the issues that the PCT considers are public finances, the voting process, government activities, etc.

Buchanan suggested that the principle of rational economic behavior is applicable to the study of political processes. This means that a person who has taken an elective office will be guided not by considerations of public welfare, but by his own private interests.

So, if an ordinary consumer seeks to maximize the utility of the goods acquired, an entrepreneur - to maximize profits, then a representative of elected bodies will also strive to maximize his/her private benefit. And this benefit consists in the realization of the desire to be re-elected, to get as many votes as possible in the elections.

Paul Heine, in "The Economic Way of Thinking", provided an entertaining graph illustrating the principle of rational behavior of a statesman (Figure 13.1).

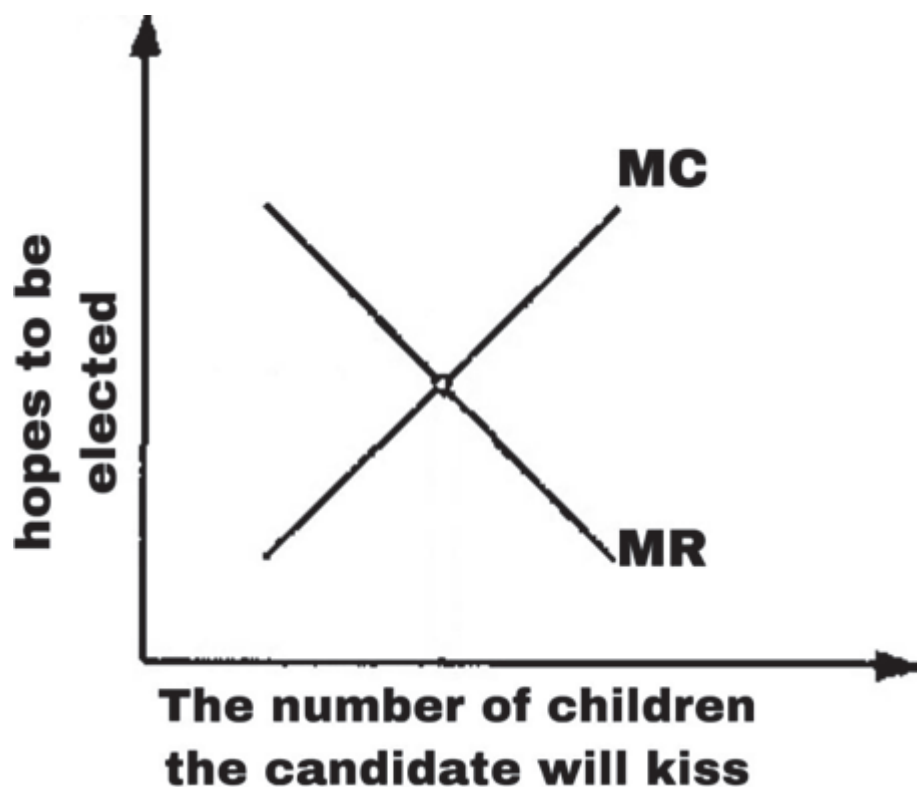


Figure 13.1. Costs and benefits of the statesman

In a playful way, this graph reflects the most important idea of the theorists of PCT: a public official, just like the subjects of a market economy, seeks to balance their marginal costs (MC) and marginal revenue (MR).

The peculiarity of the PCT approach lies in the fact that any decision made by the society depends on the voters' economic assessments of their costs and benefits in connection with its implementation.

## 2. Direct and representative democracy

In modern society, public choice is exercised through either direct or representative democracy.

In a direct democracy, all decisions are made directly by the voters, for example, through a referendum. Swiss municipalities operate based on direct democracy. However, on the scale of a large state, the mechanism of direct democracy is too expensive.

*Representative democracy* is based on the principle of delegation of authority through elections to trusted persons in government.

The mechanism of public choice is imperfect both in direct and representative democracy.

In a representative democracy, well-organized pressure groups called lobbies have the best chances to realize their economic interests through an elected person intermission (*lobby* – back rooms – utility rooms, side rooms in the building of institutions, theaters. They are used for recreation of meeting participants and visitors during breaks, intermissions. Informal meetings are held in these rooms (“*Backroom setting*” - informal, without protocol).

Groups of oligarchs, representatives of the military-industrial complex, branch trade unions, etc. can act as lobbyists.

PCT considers the decision-making process in a representative democracy as a kind of market transaction: “You provide me with votes in elections - I provide you with the adoption of specific decisions that satisfy your economic interests.”

Large material benefits obtained through the political process are called political rent. Allocation of resources in favor of lobbying groups is not economically efficient, because occurs to the detriment of the majority of citizens.

### **3. Imperfection of public choice. State failures**

The imperfection of public choice is explained by the following reasons:

1. **Inequality in obtaining information.** People with high incomes, organized lobbying groups tend to be better informed.

2. **The phenomenon of rational ignoring.** For example, a decision to eliminate benefits for military personnel can benefit society. However, each voter will receive very little benefit, as the total benefit is distributed among the entire population. In such circumstances, voters will behave indifferently;

ignore this possibility. However, the minority, i.e. the military, who will suffer from the removal of benefits, will be organized into pressure groups.

**3. Political opportunistic decision-making cycle.**

4. **Abureaucracy** that has its own goals that are distinct from public ones.

The objective imperfection of public choice explains the presence of the so-called “state failures”. There are three types of “state failures”:

1. *X-inefficiency of the public sector*. This is a situation in which there is no cost minimization, since the actual volume of production with given resources is below the maximum possible level. If there are opportunities to reduce costs, these opportunities will be ignored since change brings unnecessary hassle and risk, and the costs of inaction are small. Therefore, state-owned enterprises do not strive for innovation, product renewal.

2. *Own goals of the organization*. Civil servants have their own private goals, which determine the nature of their activities. These goals are called “internal effects”. Internal effects include the desire to increase the budget of the organization, to control information.

3. *Side effects*. Government intervention can generate unforeseen side effects, similar to negative externalities in a market environment. However, if the firm, as a rule, is obliged to compensate for negative externalities at its own expense, then the side effects from government activities are not always compensated for to the injured party.

***Terms and definitions:***

**Public choice** is the process of non-market decision-making about the production and distribution of public goods.

**Representative democracy** is a political regime in which, although the people are recognized as the main source of power, the government of the state is delegated to various representative bodies, whose members are elected by citizens.

**Direct democracy** is a form of political organization and structure of society, in which the main decisions are initiated, made and executed

directly by citizens; direct decision-making by the population of a general and local nature; direct law-making of the people.

**Rational ignorance** is an effect in which the cost of studying a subject on your own is high enough to outweigh any potential benefits that can be expected from carefully considered decision-making, so it would be unsustainable to spend time and effort carefully studying the situation and thinking through decisions carefully.

***Review questions:***

1. What does public choice theory study?
2. Principles of rational behavior of a statesman.
3. What are the state failures?

## **CHAPTER 14. THEORY OF BUREAUCRACY**

### **Chapter questions:**

1. The concept and features of bureaucracy.
2. Modern theories of bureaucracy.
3. W. Niskanen's theory of bureaucracy.

### **1. The concept and features of bureaucracy**

Bureaucracy is a specific form of social organization in society, represented through a system of bureaus, i.e., executive authorities (institutions) responsible for the supply of public sector services to the end consumer. The bureau is a non-profit state organization funded directly from the budget. Its fundamental difference from a firm (including a state one) is, firstly, that it does not receive income from sales, since it supplies mainly public goods, and secondly, that its offer does not depend on price, but from the allocated budget.

Many prominent economists and sociologists, including Karl Marx, Max Weber, William Niskanen, Cyril Parkinson, and others dealt with the problems of the position of the bureaucracy in society. The concept of bureaucracy was introduced into science by the German sociologist Max Weber. From his point of view, the bureaucracy is the most efficient apparatus of state administration. Weber identified the main features of bureaucracy:

1. Members of the bureaucracy are personally free and subject to impersonal official norms.
2. The bureaucracy is based on a hierarchical principle.
3. Job functions within the bureaucracy are clearly defined.
4. Officials perform their functions on a contract basis.
5. The main criterion for the selection of officials is their qualifications.
6. The main and only source of income for officials is their salary, its amount depends on the position in the official hierarchy.

7. The main occupation of an official is the performance of official duties.

8. An official is promoted because of his/her official merits.

9. A civil servant or an official cannot appropriate the position he/she holds or derive income associated with it.

10. The bureaucracy and officials are subject to strict discipline and control over the performance of official duties.

According to Weber, the combination of these features shape the ideal and rational type of bureaucracy. The functioning of such a control apparatus is highly efficient. Thus, the rationality of bureaucracy (which is disputed by many critics), according to Weber, lies in three main aspects:

- *in management based on special professional knowledge,*
- *in the rational organization of the management apparatus (formalism, hierarchy, specialization),*
- *in orientation to the effective solution of specific problems.*

However, as M. Weber himself admitted, the above features are a kind of standard, an example of an ideal bureaucracy, which real officials often do not correspond to. A most radical critic of the contemporary theory of bureaucracy was K. Marx. The disadvantages of bureaucracy, according to Marx, are as follows:

- 1) Replacing the public interest with the interest of a particular official,
- 2) The “appropriation” of the state - that is, in the desire to use their positions and opportunities for purely personal purposes,
- 3) The absence of a genuine state mind and the inability to solve public problems,
- 4) Abuse of power in relation to citizens, corporatism and careerism,
- 5) Unfounded claims to competence and formalism.

## **2. Modern theories of bureaucracy**

The founders of the modern approach to the study of bureaucracy are the American sociologists Robert Merton, Herbert Simon, Peter Blau and



the Frenchman Michel Crozier, the author of the classic work “The Phenomenon of Bureaucracy” (1963).

Based on the research conducted in the 60-70s of the 20th century, they came to the conclusion that the main condition for the effectiveness of bureaucracy is not the hierarchy of positions and formalism (as in Weber), but favorable informal relations within the management team.

After analyzing the French bureaucratic model, Crozier concluded that it is based on two types of power:

- based on regulations, formal rules and prescriptions for behavior in various situations, the first type is designated by him as official authority;
- based on the situation of uncertainty, he calls the second type as “parallel power”.

The second power is opposed by him as an antithesis to the first, a denial of the latter. The consequence of the strengthening of “parallel power” is an increase in the waste of public resources. As part of a new approach to the nature of management, new criteria for the effectiveness of bureaucracy were formulated:

- 1) The priority of human and civil rights - excludes abuse of power in relation to people on the part of the bureaucratic machine;
- 2) An extensive system of public control over the activities of officials - parliamentary, financial (over the level of income and expenditure), administrative, judicial, informational (through the media and public opinion);
- 3) Legislative consolidation of certain benefits and restrictions for officials - they stimulate hard work and high prestige of the work of an official;
- 4) Constant learning of a personnel and purposeful training of the administrative elite;
- 5) Civil servants have legally protected trade union rights;
- 6) Availability of various procedures for resolving labor disputes and conflicts.

Shmuel Eisenstadt, the American-Israeli sociologist, described three options for the interaction of “bureaucrats” and “politicians” in the conditions of traditional, transitional and modern societies:

1) **the traditional model** – “government-oriented bureaucracy” is characterized by the lack of rights of an official in front of political power (often compensated by his own abuse of power in relation to society); lack of any corporatism, internal autonomy, career guarantees; the official acts as a personal servant of the rulers and of the state personified by them;

2) **the transitory model** – “bureaucracy focused on itself” is characterized by political and legal lack of control of an official who is not already supervised by authoritarian state, but is not yet controlled by a strong civil society and a democratic state; senior officials act in their own interests; management is dominated by formalism and bureaucratic ritual;

3) **the modernization model** – “society-oriented bureaucracy” is characterized by the legal and social protection of civil servants, their organization that is autonomous from political power (which guarantees timely promotion), and the development of a corporate spirit; independence from politics is combined with subordination to the government (including through control over the budget of state institutions), democratic control “from below”.

### **3. W. Niskanen’s theory of bureaucracy**

In public choice theory, the bureaucracy, like voters and politicians, has its own interest, and therefore seeks ways to maximize its own utility. The main contribution to the new theory of bureaucracy was made by William Niskanen, an American economist. In accordance with his position, the arguments of the bureaucrat’s utility function are salary, the number of subordinates and their salary, public reputation, the benefits associated with positions, power and status. Since most of these arguments in the bureaucrat’s utility function depend directly on the size of the budget, it follows that the utility-maximizing bureaucrat seeks to maximize the

budget. Therefore, the bureaucrat is by no means a neutral figure in the process of developing and adopting the budget.

Of great interest is the question of the extent to which the bureaucracy is inefficient. One possible answer to this question comes from the Niskanen model (Figure 14.1).

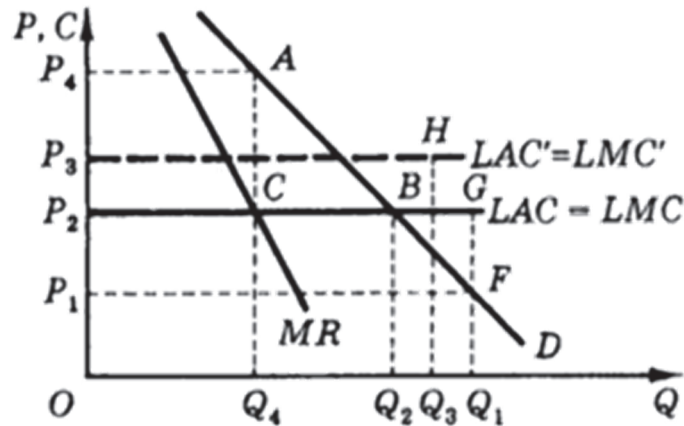


Figure 14.1. W. Niskanen's model of bureaucracy

The figure compares the behavior of a private monopolist, a private non-profit organization, and a bureau. Each of these organizations deals with the same demand function and production function, as well as the same prices for factors of production. Each of the acting agents faces the same long average cost curve (LAC). There are constant returns to scale. Hence,

$$LAC = LMC \quad (14.1)$$

Also, let's assume that the demand line D represents market demand from the perspective of the median voter (the voter whose preferences are in the middle of the scale of preferences of all voters, to the right and left of which there are approximately the same number of voters. The median voter is voters voting for the average, not for the extreme variants of this or that social project, voters who are in the middle of the electoral spectrum).

The monopolist will choose the output  $Q_4$  and, accordingly, the price  $P_4$ , his monopoly profit is represented by the rectangle  $Q_4ACP_2$ . An

unprofitable private firm will choose output  $Q_2$  and set the  $P_2$  price because the firm's goal is to maximize total output until it becomes a loss.

Let's suppose the bureau receives a budget equal to the area of  $OP_2GQ_1$ . The size of the budget is one of two factors that determine the output of a bureau; the second is production costs. If average costs are represented by  $LAC$ , it goes without saying that bureau output will be equal to  $Q_1$ .

In our case, the output of the bureau exceeds the output of the unprofitable firm, let alone the monopolist. At the same time, it can be seen that the bureau's output exceeds that which the median voter would like to have at price  $P_2$ .

Therefore, taking into account the fact that the  $P_2$  price is a Pareto efficient price, this volume deviates from the Pareto efficient one. Only in contrast to the private profit-maximizing monopolist, which under produces goods, the bureau in our case overproduces them. In both cases, there is a loss of social welfare. In the case of a monopolist, they will be CAB, and in the case of a bureau, they will be FBG.

Thus, the legislative branch of the bureaucracy proposes a budget that spends enough to purchase quantities of public goods that satisfy the median voter. For its part, the bureaucracy requires a budget that satisfies not only the production function and the cost function associated with the supply of public goods, but also its own utility function. According to public choice theorists, there are two ways to prevent the growth of state bureaucracy. The first is to **limit the size of the state apparatus** with the help of constitutional provisions. The second is the use of moral factors that impose certain obligations on both politicians and managers.

### ***Terms and definitions:***

**Bureaucracy** is a system of management carried out with the help of an apparatus standing above society.

**Hierarchy** is the order of subordination of the lower levels to the higher ones, their organization into a tree-type structure.

**Corporatism** is a political theory according to which the elementary units of society are certain social groups, not individuals.

***Review questions:***

1. M. Weber's theory of bureaucracy.
2. Criteria for the effectiveness of the bureaucracy.
3. W. Niskanen's model.

## CHAPTER 15. SOCIAL POLICY

### Chapter questions:

1. Incomes of the population and sources of their generation.
2. Differentiation of incomes of the population.
3. The essence and main directions of social policy.

### 1. Incomes of the population and sources of their generation

*Income* is one of the main characteristics of the economic situation of the population. The desire to maximize one's income dictates the economic logic of behavior to any market entity. *Income* is a sum of money that regularly comes into the direct disposal of a market entity.

Household disposable income is the amount of current income that households can use to finance final consumption of goods and services or savings. Household disposable income is defined as primary income, net of taxes and mandatory payments, plus the balance of current transfers.

It is necessary to distinguish between nominal (cash) and real incomes. Nominal (cash) income of the population is all receipts of money to the population from enterprises and organizations of all forms of ownership, non-cash transfers, etc. In other words, this is the amount of money received by individuals during a certain period.

Real income of the population is the amount of goods and services that can be bought with disposable income during a certain period. In contrast to nominal incomes, real cash incomes of the population characterize the amount of material goods and services purchased, taking into account changes in retail prices and the cost of paying taxes, as well as other obligatory payments.

Real income is determined by dividing total money income by the consumer price index:

$$\text{Real Income} = \text{Nominal Income} / \text{Consumer Price Index} \quad (15.1)$$

We have to note that the price index is a measure of the ratio between the cost of a certain set of goods and services for a given period and the cost of an identical set of goods and services in the base period (the period taken as the basis for comparison).

Thus, the real disposable income of households reflects the maximum value of goods and services that households could purchase with their current income, based on prices in the base period.

Transfer payments (transfers) are the movement of funds from one owner to another without receiving goods and services in exchange. Transfers are mandatory payments to the population: pensions, allowances, compensations, and other social transfers established by law. All of the above are transfer payments from the state budget. However, there are also private transfer payments (monthly subsidies received by students from home, gifts from wealthy relatives, etc.).

When studying well-being, in national literature, indicators of mobile and immobile incomes are distinguished. Mobile income is income spent at the discretion of the household.

Immobile incomes are funds provided from social funds and consumed strictly for their intended purpose (for example, funds allocated for treatment, education, cultural and community services).

## **2. Differentiation of the population incomes**

In any economic system, the conditions of income inequality remain, and, consequently, the living standards of various segments of the population do as well.

In economic theory, income inequality is demonstrated using the Lorentz curve (Max Lorentz (1876 – 1959) - American economist and statistician) (Figure 15.1).

The bisector on the graph expresses absolute equality, i.e. 20% of families receive 20% of income, 40 – 40, etc.

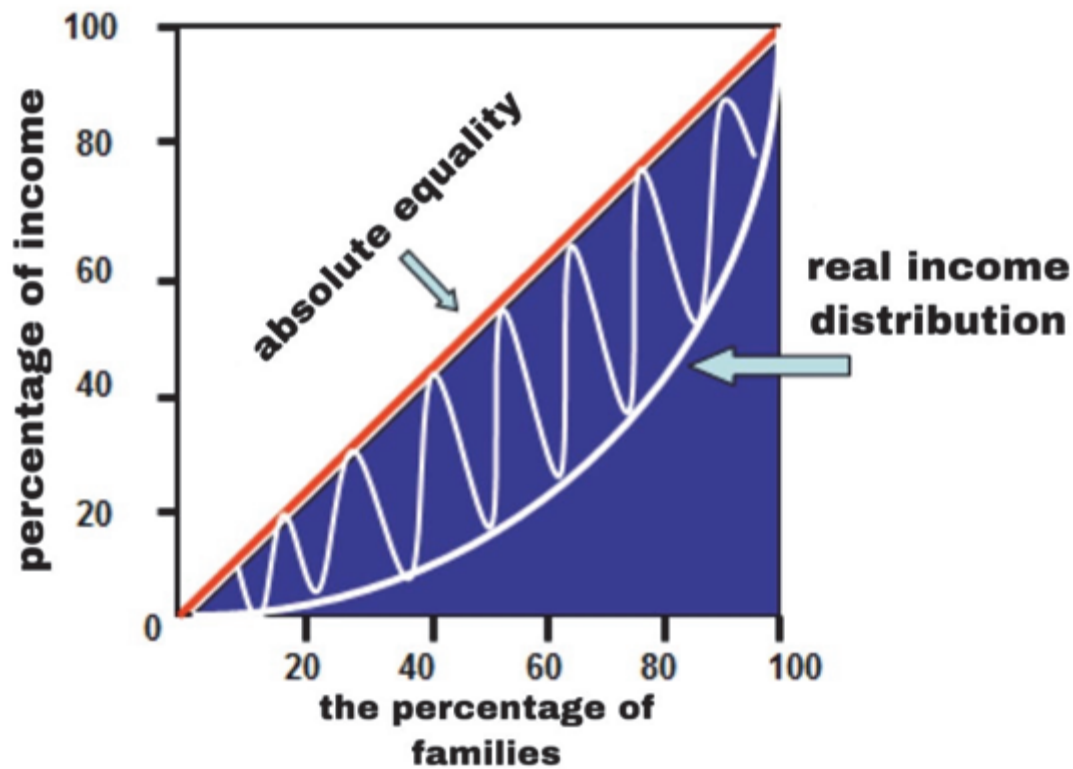


Figure 15.1. The Lorenz curve

If we divide the area of a convex figure by the area of a triangle bounded by the abscissa axis, the line of uniform distribution and a straight line parallel to the ordinate axis, we get the Gini coefficient ( $G$ ). If its value is close to 1, we have a super-rich minority and a poor majority, and if it is close to 0, equalization flourishes in society.

In the early 1990-s,  $G$  was: USA – 0.326, USSR – 0.256, Sweden – 0.205.

At the end of 1990s: in Russia – 0.409. Obviously, there has been a sharp stratification of the population.

Russia is currently the country with the most striking material inequality among the world's leading economies. This conclusion was published by the analytical firm New World Wealth.

62% of Russia's national wealth is concentrated in the hands of dollar millionaires; billionaires account for 26% of the country's wealth. India ranks second, here millionaires own 54% of the national wealth.



According to Oxfam, the international charitable organization, the wealth of the eight richest people is equal to the capital of half of the world, one percent of the world's population owns more wealth than the other 99 percent. The authors of the study also indicated that in the next twenty years, 500 rich people around the world will leave 2.1 trillion dollars to their heirs, it is more than India's GDP.

Inequality in income distribution is an acute social problem, so various economic schools put forward their own concepts of fair distribution. At different poles of these concepts is the market model, which considers distribution only from the standpoint of the market and economic efficiency, and the leveling (egalitarian) model, which evaluates distribution from the standpoint of social equality.

At present, a mixed model of income distribution has evolved in the developed countries, however, depending on national characteristics, each country is closer to either a market or an egalitarian model. For example, in the United States, policy is more focused on market efficiency, while Western European countries, primarily Germany and Sweden, are countries with a social market economy, where the principles of social justice come first.

### **3. Essence and main directions of social policy**

Social policy is a coordinated activity of economic entities aimed at ensuring favorable living and working conditions for members of society.

The main entity coordinating this activity is the state. Social policy expresses the ultimate goals and results of economic growth. The link between social policy and economic growth is interdependent. On the one hand, social policy becomes the goal of economic growth, since it makes sense to consider all aspects of economic development through the prism of their social orientation, on the other hand, it becomes a factor in economic growth, since the growth of welfare increases the motivation to work and improves production efficiency. In addition, economic growth as a process places even higher demands on the qualifications and culture of the worker,

the physical and spiritual development of the individual, which also requires further development of the social sphere.

Main functions and tasks. Social policy is designed to promote the development of equity relations in society, to shape a system of social protection, and also provide conditions for the growth of welfare and the implementation of a certain income policy. In accordance with these functions, the following tasks should be solved within the framework of social policy:

- preparation and implementation of employment programs;
- assistance to the most socially vulnerable segments of the population;
- ensuring the availability of cultural values;
- development of education, medicine, social insurance.

The effectiveness of social policy can be assessed by comparing the level and quality of life of the population of different countries.

The standard of living is the degree to which the population is provided with material and spiritual benefits based on existing needs. At the same time, the needs are active in nature, they serve as an incentive motive for human activity. It is quite normal if their growth causes an increase in the standard of living.

To assess the standard of living, as a rule, a set of indicators is used: the amount of real income, the consumption of basic foodstuffs per capita, the provision of the population with manufactured goods (usually per 100 families); consumption structure; the length of the working day, the amount of free time and its structure, the development of the social sphere, etc.

Among the listed indicators, the most important is the indicator of the level of population real incomes, whose dynamics is determined by the level of wages in all spheres of the national economy, the amount of income from private entrepreneurial activity and personal subsidiary farming, the amount of payments from public (social) consumption funds, the tax policy of the state and the level of inflation.

**The quality of life.** Unlike the standard of living, the quality of life is rather difficult to assess, since, firstly, this indicator acts as a kind of

integrative assessment. For example, guided by their understanding of the quality of life, someone may refuse a million dollars, preferring to go to the moon. Secondly, qualitative parameters are quite difficult to quantify.

The “quality of life” in a broad sense refers to the satisfaction of the population with their lives in terms of various needs and interests. This concept covers the characteristics and indicators of the standard of living as an economic category, working and leisure conditions, housing conditions, social security and guarantees, law enforcement and respect for individual rights, natural and climatic conditions, environmental conservation indicators, the availability of free time and the ability to make good use of it, and, finally, subjective sensations of peace, comfort and stability.

The quality of life of the population directly depends on its level. When the standard of living of the population grows, the income of the population will increase, therefore, the provision of the population with material goods will rise, and the quality of life will improve as well.

The main indicators of the quality of life include: working conditions and safety; availability and use of free time; the state of the environment; health and physical development of the population, etc.

### ***Terms and definitions:***

**Incomes of the population** - the amount of money and material goods received or produced by households for a certain period of time and intended for the purchase of goods and services for personal consumption.

**Nominal income** is the amount of money received by households during a given period.

**Disposable income** is the household income that can be used for personal consumption or savings; less than the nominal amount by mandatory taxes and payments.

**Real income** is the amount of goods and services that can be bought with disposable income during a certain period, i.e. adjusted for changes in price levels.

**The poverty rate** is the proportion of the population whose income is below the official minimum consumption level set by the government.

***Review questions:***

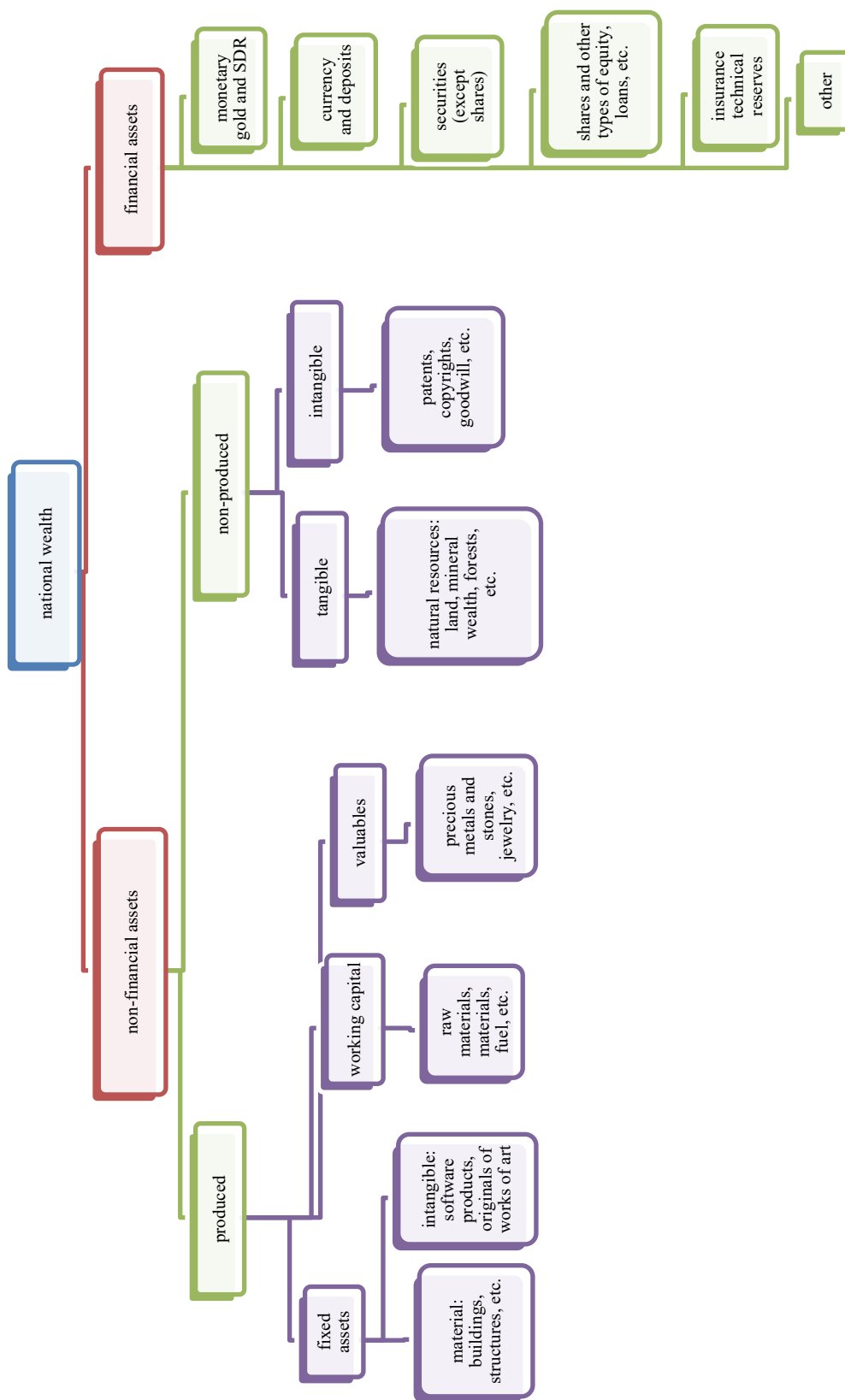
1. Principles of generating incomes of the population.
2. Measuring inequality in income distribution using the Lorenz curve.
3. Differences between the social subsistence minimum and the physiological minimum.
4. Social justice and economic efficiency: the main contradictions.
5. Social protection and social guarantees in a market economy.
6. Social role of income indexation.

## BIBLIOGRAPHY

1. *Anosova A.V., Kim I.A., Seregina, S.F. et al.* Macroeconomics: a textbook for academic undergraduate studies / ed. by S.F. Seregina. – 3<sup>rd</sup> ed., revised and enlarged. – M.: Yurayt, 2013. – 521 p. ISBN 978-5-9916-2115-1.
2. *Baumol W.J., Blinder A.S.* Macroeconomics: principles & policy. – 11<sup>th</sup> ed. – Mason: Cengage learning, 2008. – 420 p. ISBN 978-0-324-58631-2.
3. *Blanchard O., Johnson D.R.* Macroeconomics. – 6<sup>th</sup> ed. – N.J.: Pearson, 2013. – 551 p. ISBN 978-0-13-306163-5.
4. *Bulatov A.S. et al.* Macroeconomics: a textbook for universities / ed. by A.S. Bulatov. – 3<sup>rd</sup> ed., revised and enlarged. – M.: Yurayt, 2022. – 333 p. ISBN 978-5-534-06407-0.
5. *Carlin W., Soskice D.* Macroeconomics: institutions, instability, and the financial system. – Oxford: Oxford University Press, 2014. – 680 p. ISBN 978-0-199-65579-3.
6. *Grebennikov P.I., Grebennikov L.S.* Economics: a textbook for universities. – 5<sup>th</sup> ed., revised. – M.: Yurayt, 2022. – 310 p. ISBN 978-5-534-08979-0.
7. *Kulkov V.M., Tenyakov I.M.* Macroeconomics: textbook and workshop for universities. – 2<sup>nd</sup> ed., revised. – M.: Yurayt, 2021. – 294 p. ISBN 978-5-534-03568-1.
8. *Kundakchyan R.M., Gotsulyak I.F., Ignatjeva O.A., Abdullin I.I.* Macroeconomics: textbook. – Kazan: Publishing house of Kazan University, 2015. – 276 p.
9. *Mankiw N.G.* Principles of macroeconomics. – 7<sup>th</sup> ed. – N.Y.: Worth Publishers, 2012. – 598 p. ISBN 978-1-4292-1887-0.
10. *McConnell C., Campbell R.* Macroeconomics: principles, problems, and policies. – 17<sup>th</sup> ed. – N.Y.: McGraw-Hill/Irwin, 2008. – 488 p. ISBN 978-0-07-327308-2.
11. *Nureev R.M.* Macroeconomics: a manual for seminars. – M.: Norma; Infra-M, 2021. – 384 p. ISBN 978-5-91768-788-9.

12. *Rodina G.A. et al.* Macroeconomics: textbook and workshop for universities / ed. by G.A. Rodina. – 2<sup>nd</sup> ed., revised and enlarged. – M.: Yurayt, 2020. – 375 p. ISBN 978-5-534-00078-8.
13. *Romer D.* Advanced macroeconomics. – 4<sup>th</sup> ed. – N.Y.: McGraw-Hill/Irwin, 2012. – 716 p. ISBN 978-0-07-351137-5.
14. *Schiller B.R., Gebhardt K.* The Macro Economy today: textbook. – 16<sup>th</sup> ed. – N.Y.: McGraw-Hill/Irwin, 2015. – 544 p. ISBN 978-1-2642-7358-4.
15. *Tarasevich L.S., Grebennikov P.I., Leussky A.I.* Macroeconomics: textbook and workshop for academic undergraduate students. – 10<sup>th</sup> ed., revised and enlarged. – M.: Yurayt, 2016. – 527 p. ISBN 978-5-9916-4988-9.
16. *Vymyatnina Yu.V., Borisov K.Yu., Pakhnin M.A.* Macroeconomics: in two parts. Part 1: textbook and workshop for universities. – M.: Yurayt, 2022. – 294 p. ISBN 978-5-534-01728-1.
17. *Wickens M.* Macroeconomic theory: a dynamic general equilibrium approach. – N.J.: Princeton University Press, 2008. – 470 p.
18. *Zolotarchuk V.V.* Macroeconomics: textbook. – M.: Norma; Infra-M, 2022. – 537 p. ISBN 978-5-16-010587-1.

## The structure of national wealth



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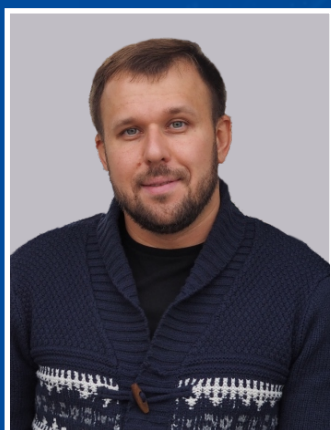


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