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GLOBAL ECONOMY

Textbook

Recommended by the Methodical Council of
National Technical University of Ukraine
«Igor Sikorsky Kyiv Polytechnic Institute»
Textbook for students
Specialty 051 "Economics"
Educational program "International Economics"

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The textbook focuses on the main issues of the global economy: the principles of formation, functioning, level manifestations and stages of development. Internationalization, integration, transnationalization as the main stages of formation of the global economy is studied. Characteristic features, evolution and models inherent in economic systems are considered. The indices of the global economic space are characterized and the positive and negative consequences of global transformations are substantiated. Attention is paid to the study of global problems of mankind, including social, food, energy and raw materials, peace and disarmament, global terrorism. The global markets and mechanisms of their functioning are analyzed, such as: the global market of goods and services, the labor market, the global technology market as a form of realization of the technological resource of global economic development and international scientific and technological relations. The global context of Ukraine's economic development and its integration into the global world economic system are substantiated and presented.

Recommended for masters of specialty 051 "Economics", graduate students, research and teaching staff, specialists in international economics.

Content

Introduction

Scientists often study the relationship and interdependence between the countries of the world, taking into account the economic component, the development of scientific and technological progress and in particular, information technology and the development of Industry 4.0. As all spheres of human life, including the economic sphere, acquire new features under the ever-increasing transformation processes in the world, the problems of globalization and the transformation of the world economy into a global one give rise to numerous discussions of economists and practitioners. Although scholars differ on the interpretation and understanding of globalization, there is no doubt that these processes are related to social, political and economic issues.

Research on the global economy is very relevant, given the increased development of internationalization and integration, the formation and effective functioning of global corporations in the world, liberalization of international trade, the effectiveness of leading international organizations, the formation and functioning of the international capital market, free economic zones and more. The globalization of the world order is an objective process of human development and solving global problems, taking into account economic factors that require detailed study, which determines the relevance of the issues addressed in this textbook. It is also necessary to study the rational strategies of effective behaviour of society and relations between countries to develop measures to address global problems of mankind.

The textbook is designed for students of higher education in the specialty "Economics". The aim of the course "Global Economy" is to form students' understanding of the processes of global economy, laws and principles of its development, identify prospects for national economies, taking into account their relationship and interdependence, the effectiveness of strategies to achieve this in today's world economy in global. The use of the textbook will give students the opportunity to prepare for both lectures and practical classes, to perform independent work on the current course. The presented material will be interesting for graduate students and research and teaching staff, specialists in the field of international economics.

The discipline "Global Economy" is based on the use of knowledge gained by students in general economic disciplines, such as economic theory, microeconomics, macroeconomics, international economics, international finance, international economic relations and world economy.

Section 1
GLOBAL ECONOMY: PRINCIPLES OF FORMATION, FUNCTIONING AND DEVELOPMENT

1.1. Formation and development of the global economy

- The essence of the global economy and the level manifestations and stages of globalization.
- Economic globalization, internationalization, integration as stages of formation of the global economy.
- Characteristics, evolution and models of economic systems.
- Indices and components of the global economic space.
- Positive and negative consequences (results) of global transformations.

1.1.1. The essence of the global economy and the level manifestations and stages of globalization

The development of the international economy, scientific and technological progress and the information revolution in the world have contributed to the emergence of globalization. The development of computer technology and mobile communications has accelerated transactions in various types of foreign exchange transactions, which has become one of the necessary and important components of effective cooperation between countries and regions of the world in the supply of goods and services.

The concept of "globalization" is borrowed from the English language (which included Latin) Globus - globe, sphere, globe, that which belongs to the planet, the world and the globe as such. From this word were formed other concepts, such as "global", "globalize", "transformation of a phenomenon into global or global" (globalize, globalization). These terms were originally used only in the social sciences. In 1961 the concept of globalization was recorded in the English dictionary. This term is more than 400 years old, but its use in science began not so long ago, approximately in the 60's of the twentieth century, and since the 80's, this concept has become academic. It should be noted that the twentieth century was characterized by the transformation of the world economy and the emergence of new, unknown processes of its development, which required urgent research and explanation. In 1981 the American sociologist J. McLean called on all scholars to study these new processes, which manifested themselves not only in economics and sociology, but also in other fields. The scientist called on all scholars and practitioners to understand the development of the historical process of increasing globalization, which needed to be explained. After a long study and substantiation of these processes, scientists have given them a new meaning called "globalization processes".

In the late 80's of the twentieth century. the concept of globalization has already become scientifically widespread. Scientists have studied the concepts, theories of globalization and interpreted the definition of the essence of the concept of "globalization" and "global processes". The founders of the theory of globalization in different sciences are different scientists, for example, among sociologists R. Robertson, I. Wallerstein [*Wallerstain I. Globalization or the Age of Transition // International Sociology. 2000. Vol. 15 (2). No. 6. P. 249–265*], E. Giddens [*Giddens A. Affluence, poverty and the idea of a post-scarcity society. Geneva: United Nations Research Institute for Social Development, 1995. 12 p.; Giddens A. The Consequences of Modernity. Cambridge: Polity Press, 1990. 421 p.; Giddens A. The third way. The renewal of social democracy. London: Polite Press, 1998. 166 p.*], in philosophy K. Popper, F. Fukuyama. The founders of the theory of globalization among economists include Theodore Levitt, and financiers - J. Attali, J. Soros and others.

The first scientist who studied and scientifically substantiated the essence of the concept of "globalization" and introduced it into scientific circulation was the sociologist R. Robertson. He also developed basic terminology, conceptualized and explored aspects of globalization theories. In one of his scientific works in 1983, the scientist uses and uses the term "globality", and in 1985 he gives a detailed definition of the essence of the concept of "globalization". His 1992 monograph already presented the basics of the concept of globalization. But it should be noted that along with the works of R. Robertson in the Harvard Business Review published an article "Globalization of Markets" by Professor Harvard Business School Theodore Levitt. Therefore, in economics, the popularization of the concept of "globalization" is dedicated to the economist Theodore Levitt, but he did not put it into scientific circulation because other scientists did it to him. In addition to studying the essence of the concept of "globalization" required a detailed study of the interpretation of the concept of "global economy".

Consider the interpretation of concepts close to "globalization" and "global economy", such as: "global environment", "global processes", "globalism". Let's investigate and substantiate the difference between these concepts. Of course, the creation of a global environment as such is due to the emergence of new unknown processes. It can also be assumed that the global environment is an external system of components, which directs its action to the elements of the world system from the outside. In this case, the world system is the highest level system, which includes elements of a lower order system (continents, countries or regions).

Global processes are certain patterns or successive changes that occur in the global system. We can assume that the global process is the development of the world system, which is characterized by a certain transition from the internationalization of economic life to globalization itself. Due to global processes, the transformation and transition of the world system to the global, i.e. the world market to the global market.

Globalism is a branch of science that studies the general planetary problems of humanity (both modern and those that await humanity in the future development of society) and human civilization in general. Science studies as a whole a political, economic, social organization in the global space.

Consider the difference in the interpretation of the essence of the concepts of *"globalization"* and *"global economy"*. The phenomenon of globalization should be considered multifaceted as a set of transformation processes (combination of all spheres of the world community), which are accompanied by the transformation of the world system into an open integrated system. An open integrated system is a set of informational, technological, financial, economic, social, political, social, cultural and other interrelationships and interdependencies.

The global economy has undergone a certain evolution of formation, so it is a historical social process, the essence of which is the growing interconnectedness of national economies of states that are highly interdependent. The transformation of the world economy into a global one, taking into account one of the important factors influencing globalization, namely internationalization, can be depicted schematically - explaining the structuring of the globalization process, including types of globalization and the relationship of economic globalization (Fig. 1.1).

Consider the stages and periods of globalization:

1) primary globalization (since 1945);
2) post-war globalization (1945–1970);
3) the globalization of the Cold War (1971–1989);
4) globalization of the new world order (1990–2000);
5) information and communication globalization (2001–2014);
6) globalization of the "knowledge economy" (2015-2020).

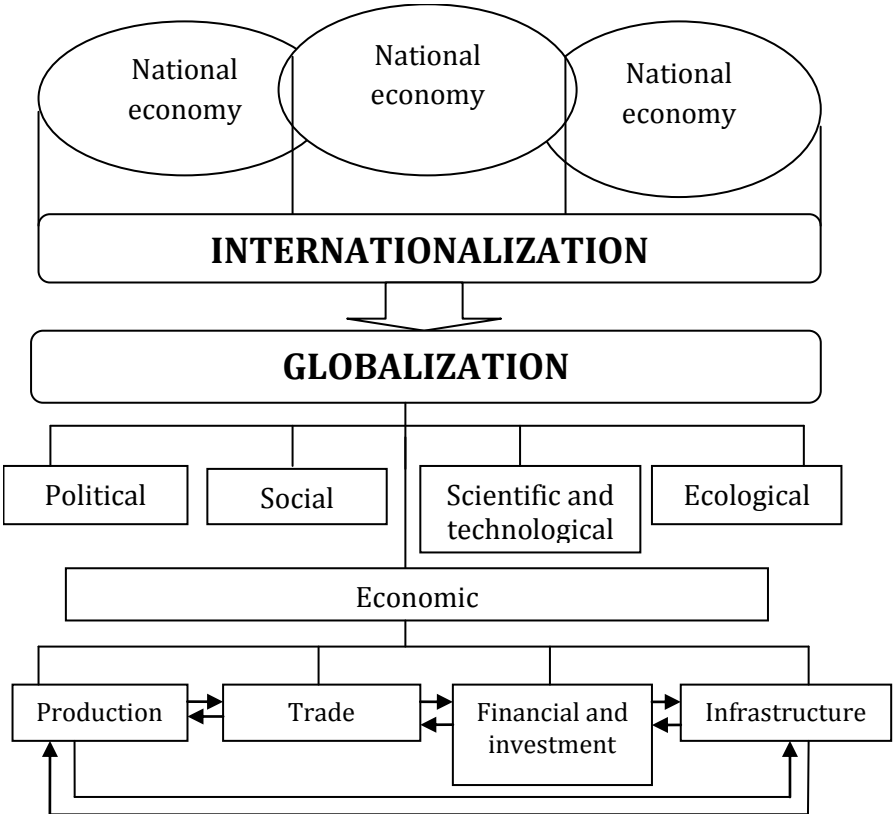

Fig. 1.1. Structuring the globalization process and types of globalization

Let's highlight the levels of globalization and reveal their content:

– world level - in the processes of interconnection and interdependence of regions and countries are intensifying, respectively, there is an intertwining of economic systems and economic complexes of states;

– country level - the economies of countries become open and integrated into the world economic community;

– industry level - the competitiveness of companies in the middle of the industry of any country increases compared to the competitiveness of a similar company in another country;

– company level - global corporations and strategic alliances are developing, focusing on global sources of supply and markets, multinational production is growing.

To characterize the main features of globalization should use the approach of scientist M. Castell. The scientist quite successfully and accurately states that the main features of globalization are "the creation of a new reality with a new social structure, specific economy and a special virtual culture" and "information economy is global because it allows at any time to operate worldwide" [*Castell M. The Rise of the Network Society (The Information Age: Economy, Society and Culture. Oxford: Blackwell Publishers, 1996. Vol 1. 481 p. (p. 92)*]. In his opinion, the global economy is a historical reality and generally different from the world economy. The difference is that in the global economy, the process of capital accumulation is carried out around the world. Accordingly, the main factors of globalization of the world economy are as follows: through information networks, almost the whole world is connected by technology, human and useful functions, which form a kind of global system that requires a single system of management.

According to M. Castells, it penetrates into all countries, into all cultures, into all territories, into all communication flows and into all financial networks. Therefore, a global information space was created, which created conditions for the exchange of scientific information, opened new opportunities for interstate exchange in the fields of economy, culture, education, etc., and accelerated the information revolution and strengthened civilizations and continues to promote global consciousness. Accordingly, in the scientific works of researchers it's possible to come across the definition of globalization, which takes into account the narrow subject approach that globalization is a multifaceted process of global transformations that affects all parties and spheres of public life.

Globalization of the economy is caused by the development of the world economy and the world market in particular. The main processes of economic globalization were the components shown in Fig. 1.2.

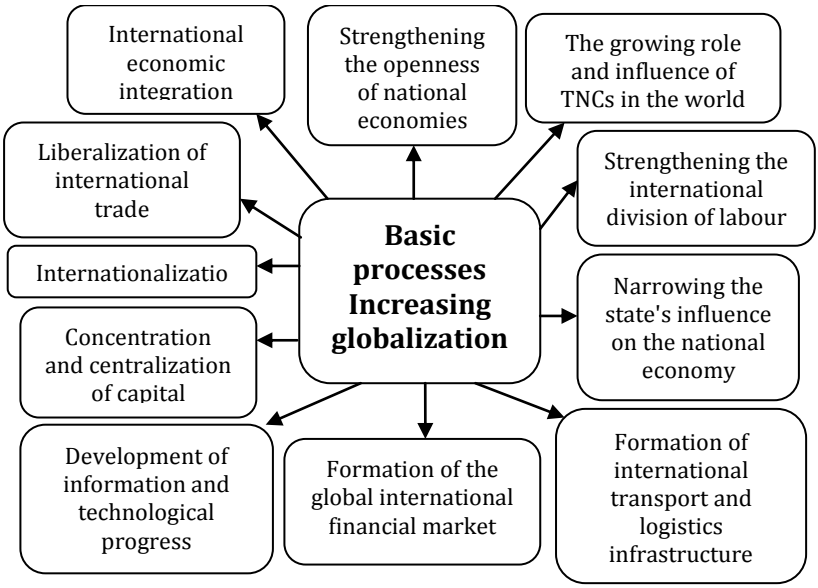

Fig. 1.2. The main processes of increasing globalization

1.1.2. Economic globalization, internationalization, integration as stages of formation of the global economy

The internationalization of economic life is an objective process of emergence and development of ties between the national economies of different countries, covering all aspects of economic life. In the context of the process of internationalization, economic globalization is manifested in the deepening of the exchange of goods

and services; expansion of international capital movements; strengthening labour migration processes; growing role of international scientific and technical relations. Numerous lists of scientific works of famous scientists are devoted to the study of internationalization processes, in particular, such works in which internationalization, globalization and regionalization are considered in the context of sustainable development [1; 2; 3; 4]. Analysing the essence of the concept of "*internationalization*" in scientific works, it should be noted that it should be interpreted as follows: internationalization - the process of intensifying the involvement of companies in international operations (transnationalization) and expanding and deepening world economic relations by increasing mobility of factors (integration).

When studying the national economy of any country, the main focus should be on internal and external manifestations of internationalization. Domestic ones include imports of goods and services, capital movements, labour immigration / re-emigration, and brain drain. External manifestations are the export of goods and services, as well as the movement of capital, labour emigration. For the whole world economic complex, internationalization is characterized by an external direction of development (transformation of traditional markets for goods (services) and factors of production and internal direction (transformation of the structure of intra-corporate trade).

Integration as a stage of formation of the global economy is a natural result of the growth of international movement of goods (services) and factors of production, which leads to the strengthening of cooperation between countries The *integration process* is the convergence and intertwining of the national economies of several countries in order to build a single production and commercial mechanism. *Economic integration* is a process of economic cooperation between countries, which leads to the convergence of production and commercial mechanisms, which takes the form of interstate agreements and is regulated by the intergovernmental bodies of integrated countries [5].

Integration processes contribute to the development of such a phenomenon as "economic regionalism", which creates more favourable conditions for a group of countries for trade and the movement of factors of production. The key process of global transformations and globalization of the economy is the development of international economic integration, which is manifested in the elimination of differences between economic entities - representatives of different countries [6].

The development of international economic integration is due to the following factors [6; 7]: the uneven distribution of resources between different countries, which affects their economic development, and the regularity of scientific and technological progress, which lead to the combined efforts of many countries; demographic trends that increase differences between countries in terms of population size and quality; sharp reduction of distances due to the development of transport and utility networks; the availability and need for joint solutions to such problems as environmental, food, raw materials, use of the oceans and space. It can be argued that the strengthening of global integration processes in the global economy is characterized by growing political and economic interdependence of international cooperation, blurred state sovereignty, trade liberalization, concentration of capital, increased information flows, technological innovation.

1.1.3. Characteristics, evolution and models of economic systems

The economy functions as a mechanism of interconnected and interdependent elements of the system. Each of the elements develops in accordance with common to the whole system of laws, rules and laws.

An economic system is a set of interconnected and ordered elements of the economy, which are endowed with such features:

1) form integrity in functioning;
2) form the economic structure of society;

3) have a common goal (mission);
4) characterized by relative stability of functioning.

According to the evolutionary factor, technological method of production and development of productive forces, economic systems are classified as follows:

- pre-industrial society;
- industrial society;
- post-industrial society.

According to the multi-criteria approach, economic systems are divided into market and administrative-command. Market economy implies the dominance of private property, the presence of private enterprise, the presence of competition in business, etc.; preference is given to commodity-money relations, the administrative-command system is based on state ownership, low competition, a clear development plan, significant hierarchical subordination of business entities, etc.

Swedish model. The model began to take shape in the 1930's and was finally formed in the early 50's. This model of public administration is characterized by a developed market economy and social infrastructure. The main feature of the model is the extreme socialization with a significant role of the state, which ensures a high level of quality and universal access to social services. The main function of the state is the distribution through the tax system of income received in the private sector. Social policy is based on the principles of "solidarity" in social protection, and the principle of "social citizenship" has been introduced.

American model. The model is characterized by the predominance of private (mostly shareholder) ownership over state. It is competition and equity that help maximize profits. Such an economic mechanism is also called the Darwinian (the strongest survives), or Anglo-Saxon model. Characteristic features are: 1) the advantage of private companies, whose management primarily seeks to maximize short-term profits, and investors are trying to get significant dividends; 2) low level of trade union movement; 3) wage agreements are made at the company level.

German model. The social market economy in the model is somewhere between "market capitalism" and "totalitarian administrative-command economy". The main principles of the model are to ensure the highest possible welfare of the population on the basis of: 1) the establishment of competition rules; 2) conducting such a policy focused on growth and ensuring sustainable development; 3) ensuring full employment; 4) expansion of foreign economic activity. Important in the model is to ensure the efficiency of economic activity and socially just monetary system, and especially its components such as social security, social justice and social progress. The above determines the degree of development of socially oriented market economy.

Japanese model. Since the 1970's, Japan's economy has been characterized by an extensive growth model, and today by an intensive model. This was due to the lack of resources for minerals. This led to the focus on the use of "economies of scale" and "savings on production costs" in the processing of imported raw materials, and finished products with significant added value (knowledge-intensive industries) were most often intended for export to developed countries. At the same time, research is being funded and the transition from export-oriented to capital-oriented (direct and portfolio to Southeast Asia and the United States, and later Western Europe).

Chinese model. This model is based on the concept of two strategic transitions: 1) the transition from a traditional planned economy to a system of socialist market economy; 2) the transition from extensive to intensive growth. The engine of the country's economic growth was domestic consumption and domestic demand of China's population, sources of growth - labour and natural resources; attractive investment climate.

1.1.4. Indices and components of the global economic space

The International Economic Forum identifies the following indices that characterize the economy of the global economic space:

- global competitiveness index;
- index of economic freedom;
- ease of doing business index;
- trade facilitation index;
- network readiness index;
- Travel and Tourism Competitiveness Index.

If necessary, you can synthesize an index that will meet the specific objectives of the study. The basis for building an index is to determine its structure. Most often, the index has a clear name for a wide range of researchers. The index should consist of such data sets that fully reflect its essence. The value of the index is usually in the range from 0 to 1, but there are other limits, such as 0 to 7, 0 to 100, -1 to 1, and so on. Each of the global indices is developed by a specific organization and contains groups of indicators. The number of countries studied according to one or another index may vary.

To use global indexes in research, keep in mind:

1) numerical values that make up the index have a different nature of origin and units of measurement;
2) the index is often a dimensionless quantity;
3) a dimensionless is provided by rationing of data sets;
4) each data set is normalized using a formula that best reflects the content of the value in the index;
5) a significant amount of data included in the index, to varying degrees affect its interpretation. In this regard, it's necessary to determine the weights for each data set;
6) weights are sufficiently determined subjectively (by expert methods) or, for example, by the ratio of the monetary equivalent of each data set in the index (for example, for the index that characterizes the turnover of industries for

countries, you can separately determine the percentage of agricultural contribution, industry, banking and services).

An example of determining I_i for four data sets that are normalized relative to the maximum value is shown in the following formula:

$$I_i = \beta_1 \cdot \frac{A_i}{\max A} + \beta_2 \cdot \frac{B_i}{\max B} + \beta_3 \cdot \frac{C_i}{\max C} + \beta_4 \cdot \frac{D_i}{\max D}$$

Детально розглянемо декілька глобальних індексів — їх індикатори, кількість досліджуваних країн згідно з індексом та організації, які розробили ці індекси.

Global Competitiveness Index

The Global Competitiveness Index was developed by the organizers of the World Economic Forum. To calculate this index, indicators are provided by 139 countries. After the calculation, the results of the Global Competitiveness Index are published in the form of a report entitled "Global Competitiveness Report".

The Global Competitiveness Index is formed of three groups of indicators:

1) groups of indicators of basic requirements;
2) groups of efficiency enhancers;
3) groups of innovation indicators (Innovation and sophistication factors).

The first group includes four complex categories of economic policy: institutional environment; economic infrastructure; macroeconomic stability and a category that characterizes human health and primary education.

The second group includes six categories of policy: higher education and the education system; commodity market efficiency; labour market efficiency; perfection of the financial market; technological readiness and market scale.

The third group is characterized by one of two important comprehensive indicators: business excellence and innovation.

Index of Economic Freedom

The Economic Freedom Index was developed by the Heritage Foundation. It includes ten indicators: 1) the level of freedom of business; 2) the level of freedom of trade; 3) the level of fiscal freedom; 4) the degree of dependence of the economy on the government; 5) the level of monetary freedom; 6) the level of investment freedom; 7) the level of financial freedom; 8) the right to private property; 9) the level of freedom from corruption; 10) the level of freedom of the labour market. These indicators are calculated using the method of expert assessments and using a variety of data that take into account the economic, financial, legislative and administrative characteristics of a country.

Environmental Dimension Index

It is calculated using the Environmental Performance Index. The Environmental Dimension Index was formed by the Yale University Center for Environmental Law and Policy together with Columbia University (USA) for 163 countries.

To calculate it, use the method of aggregation according to which the index is formed of two categories of environmental policy of the upper level:

1. Environmental health characterizes the ecology of the country, i.e. what is the sanitary condition of the environment of the studied country.
2. Ecosystem vitality is part of the environmental policy of any country in the global environment is the viability of the ecological system (or ecosystem). It also includes ten mid-level environmental indicators and twenty-five low-level indicators.

This environmental dimension index shows how well a country is able to protect the environment. This is also indicated by both short-term and long-term policy goals and strategies developed and implemented by the countries studied.

Social Dimension Index

The Social Dimension Index takes into account two global indices.

1. The Quality of Life Index was developed by an international organization called International Living. It takes into account nine indicators: 1) the cost of living; 2) recreation and culture of people; 3) the state of the country's economy; 4) the state of the country's environment; 5) freedom of people; 6) human health; 7) state of infrastructure; 8) risks and safety of life; 9) climatic conditions.

2. The Human Development Index is calculated every year. It's worth noting that most of the United Nations member states are included in the list of countries according to which this index is calculated within the United Nations Development Program. Its formation is carried out through the use of such techniques as aggregation, and takes into account three categories of human development policy at the highest level: health; education; the welfare of the population living in a country. These categories of policies are formed using key indicators that can identify the country's education system, analyse poverty, unemployment and measures taken by the country's leadership to protect human health, address gender issues in the country and other components of human health development.

1.1.5. Positive and negative consequences (results) of global transformations

Globalization is an ambiguous, multidimensional and non-linear process that contributes to the multidirectional and contradictory impact on modern world economic development, economic security of any country in the world and the distribution between them of both economic benefits and threats. Therefore, globalization, on the one hand, opens up unprecedented opportunities and, on the other hand, creates unprecedented threats and risks. Accordingly, globalization has both advantages (disadvantages) and disadvantages (disadvantages).

Consider the impact of globalization on world economic development, given both the advantages and disadvantages. It is worth noting that the transformation of the world economy into a global one has a significant impact on the development of the modern world economic complex. The processes of development of the global economy allow countries to expand the range of use and application of various resources for its participation in the system of international division of labour. Global processes affect the competitiveness of the country in the global dimension, in particular, increasing competition between countries, which may even manifest itself in the form of competition. These processes are manifested in the manipulation of investment and financial resources. But it should be noted that this is a negative impact for countries with low and medium economic development in the global space.

Consider the socio-economic manifestations of global transformations and their impact on the development of the global economy. They should be studied separately for developing countries and countries with higher economic development. Also, identifying the consequences of the transformation of the world economy into a global one, it is necessary to take into account both its positive and negative impact on the development of society.

For countries with developed economies, positive manifestations of socio-economic global transformations can be considered:

- growth of the country's foreign trade;
- the ability to gain access to the resources of other countries in the world economy;
- expanding the sphere of influence of the domination of the national capital of a country in foreign markets (expansion of capital);
- the country's ability to take full advantage of the international division of labour in global markets.

The negative manifestations (and at the same time consequences) of the transformation processes of the world economy

into a global one for the countries with more developed economies are the following:

- influx of unskilled labour to countries, which countries usually can't cope with, but are trying to solve this problem;
- reduction of tax revenues - the extent to which the country is able to manage the financial sector;
- increase in terrorist attacks, transnational crime, etc.

The positive socio-economic manifestations of global transformations in the world economy for countries with less developed market economies include the following:

- expansion of product markets, including global ones;
- attracting investment in the development of economic sectors of the country;
- accessibility to the latest technologies and involvement of the country in the latest technological developments;
- access to resources in the global space, which were previously scarce for the country;
- increasing competition which is a positive process for the development of the market economy of the state.

The negative socio-economic aspects (consequences) for less economically developed countries include the following:

- bankruptcy of some uncompetitive producers;
- withdrawal of resources (rather than their attraction) from the country;
- high level of dependence of the country's economy on the economies of other countries and economic manifestations of globalization;
- ignoring or not respecting the national customs and traditions of the country, including international customs.

Globalization challenges for any country in the global world open up certain opportunities and prospects for development, but can pose threats to economic growth. Consider the pros and cons, ie opportunities and threats to the impact of globalization processes on socio-economic development of countries around the world.

Globalization opens up such perspectives and opportunities:

- ✓ availability in the country of development and introduction of advanced technologies in the economic sectors of the state;
- ✓ development and functioning of information technologies and networks should take place gradually and show a tendency to sustainability;
- ✓ unification processes should be accelerated, which will promote the implementation of advanced, innovative technologies, development of creativity and innovation in the population and youth in particular, which are necessary for the development of Industry 4.0 both in the country and around the world;
- ✓ global economic growth can be achieved through intensive development and integration into a single effective system of functioning of the economy, science and culture of nations;
- ✓ the development of global competition should promote the right mechanism for resource allocation and efficient, economical use;
- ✓ opportunities for access to completely new innovative ideas, modern up-to-date knowledge of young people, and, of course, the opportunity for them to choose new professions;
- ✓ more active use of unified international rules, principles and customs of a country in order to accelerate international coordination in its foreign economic activities, which can also help reduce threats, local wars and conflicts between countries and create a favourable economic environment in the global economy;
- ✓ the basic components of human freedom are developed through democracy and the application of the protection of civil rights;
- ✓ unite the efforts of the countries of the international community to solve the global problems of mankind.

Globalization poses such dangerous threats and risks:

- ✓ technological differentiation, technological and social backwardness of a number of countries due to their non-competitiveness and weakness of the resource base;

- ✓ global inequality of economic and social development, increasing stratification and imbalances in the world economy [8];
- ✓ widening the gap between commodity and financial markets, increasing the turbulence of international financial flows, the threat of global crises [8; 9];
- ✓ degradation of uncompetitive industries, rising unemployment, exacerbation of social problems, weakening of national social protection systems [8; 10];
- ✓ exacerbation of conflicts of various nature and scale, the creation of a global network of terrorism, crime [11];
- ✓ loss of national identity, values, standardization of national cultures, etc.;
- ✓ the emergence of global problems of mankind - environmental, economic, social, technological, political, demographic, nuclear disaster, etc.

Questions for self-study

1. Describe the basic concepts of modern globalism.
2. Explain the essence of the concepts of "global economy", "world economy", "international economy" and their differences.
3. Justify the forms of manifestation and economic criteria of globalization.
4. Describe the Western European economic system.
5. Conduct a critical analysis of modern definitions of "global economy" and justify its difference from the "world economy".
6. Explain the basic prerequisites for the globalization of the world economy.

Tasks for testing knowledge

1. Discover the essence of the economic concepts of "globalization" and "global economy" and explain their differences.
2. Name and explain global indices and components of the global economic space.
3. Explain the essence of the concepts of "global environment", "global processes", "globalization" and explain their relationship.
4. Describe the stages and periods of globalization.
5. List the levels of globalization and reveal their content.
6. What indices highlight the International Economic Forum?
7. Describe the features that should contain the economic system.
8. What models of economic systems do you know? Explain how they have affected the development of the global economy.
9. Discover the essence of the basic models of economic systems.
10. What datasets should the global index include?
11. What is the essence of the positive and negative effects of global transformation?
12. Discover the essence of economic globalization in the context of internationalization.
13. Give the structure of the relationship between the components of internationalization.
14. List the main components of globalization.

1.2. Global problems of humanity and ways to solve them

- The essence and classification of global problems.
- Global social problems.
- Global food problems.
- Global energy and raw materials problems.
- Problems of peace and disarmament.
- The global problem of terrorism.
- Global automation of production. Advantages and disadvantages of implementing artificial intelligence in the global economic space.

1.2.1. The essence and classification of global problems

Global problems of mankind (from the word "global" is "universal", "global") are common problems that affect the whole world, all mankind, all countries, not just one country or region. The study of global problems of mankind is directly engaged in another science called "Globalism", but all the global problems of mankind can be solved through the global economy - environmental, demographic or political problems of the world. This topical science arose at the junction of such well-known important sciences as geography, biology, sociology, mathematics.

Considering the global problems of mankind and the need to solve them, we must mention the Ukrainian scientist Volodymyr Vernadsky, who devoted his research to the sphere of domination of the human mind and human development. He identified and identified the tendency to transform the anthroposphere into the noosphere, thanks to which it is possible to reach the highest stage of

human development, i.e. the domination of the human mind. According to the scientist, humanity should make significant efforts to achieve a high level of development of world civilization and the domination of the human mind.

The essence of global problems can be interpreted in three directions. The first direction is the problems that concern all countries, peoples and social strata. The second is related to the significant economic and social losses of countries that pose threats of a general scale, and the third is based on international cooperation, joint paid work of countries, governments, peoples and uniting all their efforts to address global problems.

Given the above areas, it should be noted that the global problems of mankind are a set of problems that affect all peoples of the world, respectively, they are planetary problems, and to solve them need to involve as many countries, governments, the world community to comprehensively identify and solving a global problem.

Global problems are also problems that include socio-natural, environmental problems, destruction of natural resources, impoverishment of the Earth's gene pool, and so on. The progress of humanity and the preservation of civilization and life on the planet as a whole depend on their solution. All problems are an objective factor in scientific and technological progress. They are interconnected, and the peoples of the world must work together to address each.

All the global problems of mankind can be divided into political; economic; demographic; social and environmental.

One of the most dangerous problems for humanity is political problems - war, terrorism, the arms race on a global scale and the need for peace.

Consider the classification of global problems (Fig. 1.3) according to different areas of human activity. The first area concerns the interaction of nature and society, the consequence of this interaction is, in fact, the emergence of all other problems. The second area is the social relations between countries that produce problems of general global scale. The development of mankind contributes to

the emergence of new problems, which are allocated to the third area - they relate to the future development of mankind.

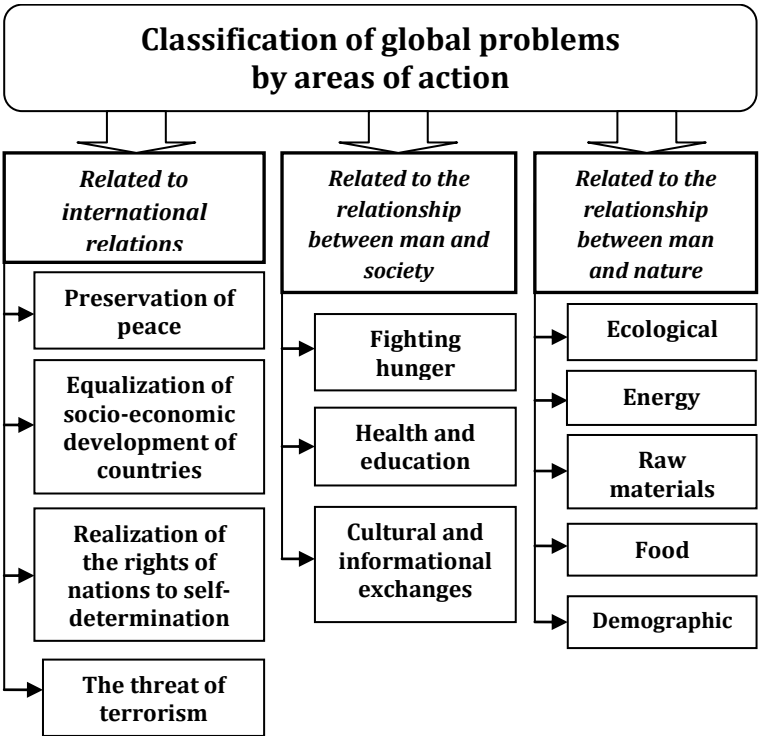

Fig. 1.3. Classification of global problems by areas of action

Since the beginning of the XXI century, weather problems have been an important threat to society - natural disasters, hurricanes, floods, droughts, tsunamis, fires, including peat, earthquakes, glaciers, volcanic eruptions and more. These problems are included in TOP-10 global problems of mankind. Along with these problems are problems that arise from the impact of people on the environment, such as explosions in factories, mines, landslides at construction sites, various environmental disasters, etc.

According to the United Nations, from 1970 to 2010 inclusive, approximately all over the world died more than 3.3 million people [12]. This is an average of 82,500 people per year, and a significant number are people with low-market economies and low per capita incomes. Significant numbers also died during hurricanes, floods and earthquakes. Other levels, third and fourth, include the problems of cyber-attacks and fraud with various information data via the Internet. For the past five years, virtual scams have spread to government and private businesses. And of course, they are becoming more frequent every year. Only through the effective cybersecurity of all countries and governments can society develop and implement new cyber programs to combat such crime.

In 2017, more than 64% of programs developed by fraudulent hackers were related to the introduction of viruses to extort and obtain funds [13]. Among them are programs such as WannaCry, NotPetya and others. For example, NotPetya cost the victims $ 300 million, and the WannaCry virus program managed to infect about 300,000 computers. Also, using certain programs, the fraudster manages to destroy oil pipelines, nuclear power plants, water utilities, etc., and sometimes the infrastructure of entire cities.

Since the beginning of the XXI century global threats shifted from the economic plane to the humanitarian plane. The global financial and economic crisis from 2008 to 2010 absorbed the attention of the whole community. The leadership of the states tried to take strategic measures to save jobs. But it should be noted that in addition to this problem, there are completely new, such as limited political will, strengthening nationalist policy.

During 2011-2015, one of the main problems is the gap in income and lack of drinking water and food, which kills a large number of the world's population. These problems cause labour migration as the impoverished population migrates from their country to others in search of high incomes. The negative trend of population displacement was particularly pronounced in 2016. Resolving interstate conflicts, renouncing nuclear weapons, and

combating terrorism are also becoming urgent priorities and require the combined efforts of governments around the world.

Scientists have begun to devote scientific work to the problem of global warming. Global warming is manifested in the form of hurricanes, tsunamis, tornadoes, typhoons, floods, especially in Asia and North America. Environmental phenomena significantly increase the financial costs of a country. Some scientists in research prove the theory, which is called conspiracy, about the invention and use of climate weapons. Governments allegedly use such weapons to put pressure on other countries. Military tensions are rising on the planet as the influence of countries that can be considered political elites intensifies. Fear of weapons of mass destruction is growing in all nations of the world.

The World Economic Forum on February 27, 2018 identifies the TOP-10 most likely and influential global problems of mankind [13].

TOP-10 most likely global risks in 2018 [13]: 1) extreme weather events; 2) natural disasters; 3) cyber-attacks; 4) data fraud, data theft; 5) unpreparedness for climate change; 6) mass migration; 7) artificial environmental disasters; 8) terrorist attacks; 9) illegal trade; 10) speculative bubbles in the economy.

TOP-10 most influential global risks in 2018 [13]: 1) weapons of mass destruction; 2) extreme weather events; 3) natural disasters; 4) unpreparedness for climate change; 5) water supply crisis; 6) cyber- attacks; 7) food crisis; 8) loss of biodiversity and destruction of the ecosystem; 9) mass migration; 10) the spread of infectious diseases.

Consider the TOP-10 most probable and influential global risks for the period from 2008 to 2018 inclusive [13].

2008 - Probable: collapse in asset prices; influential - the collapse of asset prices;

2009 - Probable: collapse in asset prices; influential - the collapse of asset prices;

2010 - Probable: collapse in asset prices; influential - the collapse of asset prices;

2011 - Probable: storms and cyclones; influential - financial crisis;
2012 - Probable: income gap; influential - systemic financial failures;
2013 - Probable: income gap; influential - systemic financial failures;
2014 - Probable: income gap; influential - financial crisis;
2015 - Probable: interstate conflicts; influential - water supply crisis;
2016 - Probable: uncontrolled migration; influential - not ready for climate change;
2017 - Probable: extreme weather events; influential - weapons of mass destruction;
2018 - Probable: extreme weather events; influential - weapons of mass destruction.

By 2050, the expansion of such global problems of humanity is predicted as: 1) the number of people living in cities will increase by three times; 2) the thickness of pollution and the number of respiratory diseases will increase; 3) half of the globe does not have enough water (by 2022, 1.1 billion people do not have access to water, and 2.5 billion experience a lack of water - this is 36% of the population); 4) some types of edible fish will disappear, and 10% of the population lives thanks to the fishing industry; 5) global warming may cause millions of people to go without food; 6) almost half of tropical forests will disappear, and this will lead to the disappearance of hundreds of species of animals and plants; 7) the spread of infections that are resistant to antibiotics and will kill 10 million people each year; 8) spread of deadly diseases; 9) the number and strength of hurricanes and natural disasters will increase; 10) increase in cyber-attacks; 11) increase in the price of oil.

1.2.2. Global social problems

The social development of any country can be explored from its ability to meet the basic needs of its citizens, i.e. how strategic decisions of the government are designed effectively and aimed at improving people's lives. It is very important to create favourable conditions for the development of communities, individuals and the population as a whole to realize their potential. This is evidenced by the social development of the country and, in particular, the calculated Index of Social Development, the data of which are provided by countries for their calculation. For example, in 2017, Costa Rica, Kyrgyzstan, Moldova, Nepal, Senegal and Chile became countries with effective measures for social development, and Angola, Saudi Arabia, the Central African Republic, Kuwait, Chad and Afghanistan became groups of countries with the lowest indicator of this index, i.e. the measures they implemented were ineffective and did not bring countries significant social prosperity. By the way, it should be noted that the calculation of this index takes into account 50 indicators, and data are provided by 128 countries.

The Social Development Index takes into account both social and environmental indicators, which focus on three dimensions of social development of the studied countries: priority human needs, welfare of the population and opportunities for development in this direction.

It can be argued that the level of this index has different values in the social dimension, despite the fact that in some countries the same level of gross domestic product per capita. For example, the country under study may have a high level of social development, but, for example, in terms of per capita income, the country may have the worst value and vice versa.

The indicator of the Social Development Index is directly affected by the size of gross domestic product per capita. But it is worth noting that in 2017 and 2018, its results had a significant gap between economic (including gross domestic product) and social indicators, ie development was not directly proportional. It can be argued that when countries achieve high economic development and

their populations have the highest income levels, the dynamics of development slows down.

According to the results of the Social Development Index in 2017, Ukraine ranked 64th among 128 countries in the world, which are included in the list of countries surveyed by this indicator (surveys are conducted annually). You can find disproportion analysing and comparing the gross domestic product per capita and the index, For example, countries such as Belarus and Azerbaijan had identical gross domestic product (16.7). At the same time, Azerbaijan ranked 76th according to this index, and Belarus - 65th place [13]. And a country like Armenia, with the lowest gross domestic product of all the world's countries, has been successful. Even ahead of such a highly developed country as the Russian Federation (which in 2017 had the highest gross domestic product per capita).

Ukraine is among the countries with a human development index above average. In 2017, Ukraine took 63rd place, and in 2018 climbed a step higher and was 64th. If we analyse the CIS countries, Ukraine lost (2nd) only to Armenia, which took 59th place (ie 1st place among the CIS countries), Belarus was 65th according to the world ranking (3rd place) by CIS countries), and the Russian Federation took 4th place [13]. Despite the fact that the Russian Federation took 4th place compared to Armenia, which was in first place. However, analysing this indicator from previous years, it should be noted that it has made significant progress according to this indicator.

Thus, the countries of the post-Soviet space have a fairly low level of social development and the greatest regression on such indicators, which indicate the availability and choice of higher education, characterize tolerance and environmental ecology. If we analyse the indicators of the social development index, they remained almost at the same level. Ukraine has risen one notch by improving only some of the indicators of access to information and communication, access to higher education and freedom of choice in both education and other components, including ensuring personal freedom and feeling for everyone. The decline was based on

indicators such as personal security and tolerance, which should be increased. For example, indicators such as nutrition and health care (98.47 out of 100) were the highest; access to education (97.52), and the lowest - tolerance (40.52 out of 100) and environmental ecology (50.37 out of 100). According to this index, the first place was taken by Denmark, followed by Canada, the Netherlands, Australia, England and Germany. In these countries, the indicators that characterize access to information, higher education, communications, are the highest.

1.2.3. Global food problems

Food problems have been at the forefront for the past three decades. Prices for products are growing every year and since 1970 have reached the highest level. Inflationary processes in the economy, respectively, rising food prices significantly affect the livelihoods of the poor and countries with underdeveloped market economies. In today's global problems, it is very important to address the food security of the poor. Although it is difficult to study how much of the world's population should be provided with food and drinking water. The government of each country must address these issues and the countries must work together to address this issue. Some sources indicate that approximately 10-20 billion people live on the planet.

According to research, approximately 2/3 of the world's population needs better nutrition. Some people on the planet are deficient in vitamins because the consumer baskets of different countries differ significantly. Sometimes food is not high in calories, and in some countries, on the contrary, many people suffer from obesity. Uneven distribution is observed not only in the income of the population, but also in the quality and variety of food. Although the world produces a significant amount of food, this amount does not coincide with the geography of consumption and the need of the world's inhabitants to meet food needs. For example, North America and Western Europe have a surplus of consumer goods, and developing countries are unable to buy the right amount of food. As Asia, Africa and Latin America have the largest populations of malnutrition, these countries have significant hunger problems. To

solve them, it is necessary to use an extensive method, such as irrigation of pastures, lands for the expansion of arable land. More than 1,560 million hectares can be irrigated and added to the 1.4 billion hectares of arable land that already exist.

It should be noted that a significant amount of high-quality rain-irrigated land suitable for growing crops is in Africa and Latin America. To solve global food problems, in addition to extensive, you should choose intensive, for example, you can increase the biological productivity of existing land on the planet.

Intensification should be involved in the agriculture of those developing countries with the use of biotechnology and the planting of new high-yielding varieties of crops, crop rotation and the use of the latest technologies for irrigation and land cultivation. Continuous development and implementation of innovations, innovations and know-how in mechanization, chemistry and melioration will help solve the food problems of mankind.

Global food problems have been felt since the advent of man on the planet and the first manifestations of civilization. With each subsequent stage of development of society, this problem only became more widespread and led to malnutrition or hunger in general, which was caused by various reasons. Since the beginning of the twentieth century, this problem has intensified to the extent that it is becoming global. This problem must be solved by the world community. It is possible to characterize the global nature of the food problem due to the following circumstances: 1. It's solution depends on the collective efforts of countries around the world. 2. This problem affects every inhabitant of the planet and most people suffer from it every day. 3. Some countries of the world are socially and economically backward (for example, colonial). 4. The income of the population on the planet is unevenly distributed. Accordingly, a significant number of residents are unable to provide for them due to lack of income. There are only about ten industrialized countries in the world for which this problem can be considered almost solved.

It's the uneven distribution of food in the regions and on the continents that is becoming a key factor in the emergence of major

global food problems. Analysing the industrial regions of the world, it should be noted that in Japan, Australia, North America, Europe (both Western and Northern) there is a surplus of high-quality food production. In Southern Europe and Central Asia, Latin America, Eastern Europe, India, Indonesia, and Egypt, food supplies reach acceptable levels in accordance with World Health Organization standards. The countries most affected by the food crisis are those located in sub-Saharan Africa.

1.2.4. Global energy and raw materials problems

One third of the world's population still does not have access to reliable energy consumption [6]. It is also worth noting the uneven distribution of resources and their limitations. According to research, one inhabitant of the planet needs to have 10 kW of energy, and 2 kW is produced. Accordingly, it does not provide a full quality of human life, and therefore this global problem is quite relevant. In addition, the problems associated with the negative impact of energy on the environment have become particularly acute [5]. Massive use of oil, gas, coal harms nature and human health through emissions of soot containing heavy metals, sulfur dioxide, nitrogen oxides and other harmful substances [7]. There is a growing need in the world to take urgent action, create a long-term viable energy development strategy, which should include a full assessment and management plans for environmental and social impact, and prefer more efficient systems and technologies [14].

The main components of raw materials in the global market are energy and oil, which accounts for 39%; steel and ferrous metals account for 19%; coal accounts for 14%, and

8% is natural and liquefied gas. Dominants (main producers) of raw materials in the world are the following countries: Australia, Brazil, India, the European Union, China, USA, Russia and Indonesia. Of course, the leader in world production of oil (12%), gas (19%), aluminium (10%) is the Russian Federation, in addition, 6% account for the cultivation of wheat by the Russian Federation [15].

Researchers identify 30 countries in the world that are major players in the global raw materials market and specialize in the relevant production of certain raw materials. In addition to the above, these include: Iran (oil, gas), Canada (nickel and potash fertilizers), Chile (copper) and Saudi Arabia (oil) [15].

It is worth noting that the main for human development and life on the planet are water and air. But these reserves must be used rationally, given the need for these natural resources for future generations. Africa and South America are losing the largest areas of forest. North and Central America are also characterized by forest losses. National security strategies are now focusing more on saving natural resources and conserving them. Countries around the world are coming together to adopt concepts and agreements that address the challenges and threats to nature and the conservation of raw materials and natural resources. Such countries include the United States, Great Britain, France, and Poland.

Leading international organizations are trying to solve the problematic issues of natural resources conservation. For example, one of the European Union's strategies "A Safer Europe in a Better World" states that the basis of human life on this planet is "the struggle for natural resources, which will intensify significantly in the coming decades.

One of the countries of the European Union, Poland, attaches great importance to these issues, and allocates the relevant direction of national security in a particular area, which allows the government to focus more on the issues of raw materials and conservation of natural resources.

1.2.5. Problems of peace and disarmament

Unfortunately, today the problems of international terrorism and armed conflicts are the main topics in the news. Global armed conflicts are becoming more and more deadly. According to a study by The Guardian in 2008, 63 armed conflicts killed 56 thousand people, while in 2014, 42 conflicts killed 180 thousand people - the number of victims increased 3 times while reducing the number of conflicts by 1, 5 times [16]. The data are presented in Fig. 1.4 and 1.5 indicates the number of deaths from global conflicts.

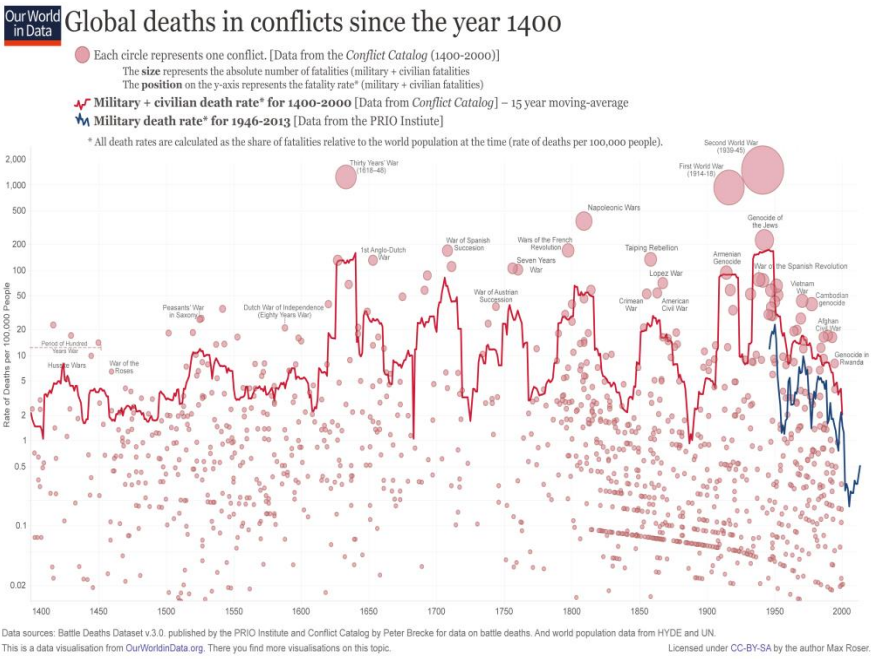

Fig. 1.4. Dynamics of the number of deaths in global conflicts from 1400 to 2000 [16]

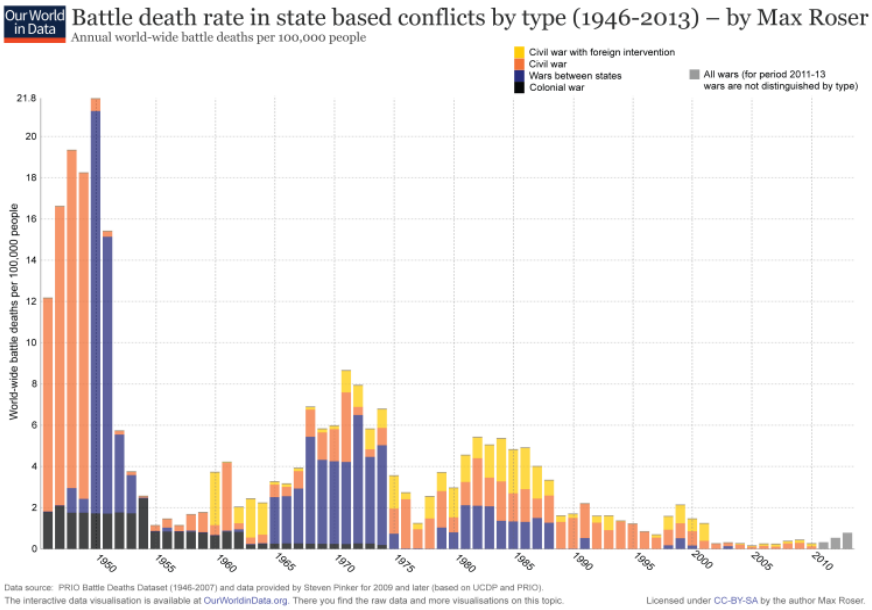

Fig. 1.5. Number of deaths from conflicts from 1946 to 2013 [16]

Armed conflicts continue very close to our borders, as well as on the territory of our state.

Countries around the world must work together to work together to work together to solve the problems of war and peace around the world. The first steps in this direction have already been taken thanks to the established international organizations of the United Nations and NATO. Individual countries and their leaders are trying to address important issues related to the war. It is worth noting that most practitioners and scholars on this issue recommend the elimination of military bases, especially the United States and Russia, which are located in other countries. The renunciation of nuclear weapons, as well as the signing of international agreements between the countries of the world on arms reduction, should be a significant contribution to achieving peace.

1.2.6. The global problem of terrorism

Terrorism is a form of political extremism that is the most brutal method of violence based on the destruction of people to achieve certain goals. Terrorism is perpetrated by individuals (or groups of individuals) who support certain political interests and represent certain countries or groups. Terrorism is based on the achievement of a specific goal, political, religious or ideological. There are three main types: political, religious, criminal. Terrorist acts include: attacking certain objects that could contribute to material damage to the country; intimidation or demonstration of force; seizure of government agencies or even embassies of certain countries; seizure of aircraft or vehicles; violence to intimidate, for example for propaganda purposes; abduction, in particular for the purpose of political blackmail; political assassinations; explosions or mass killings to intimidate and intimidate people, etc. [15].

The rise of terrorist acts is a matter of concern to society and the world community, forcing nations to unite and step up their efforts to solve the problem. Since the XXVII session of the UN General Assembly, issues related to the fight against terrorism have been raised annually and measures are recommended to be taken by countries to prevent this. In December 1972, 34 countries set up a Special Committee on International Terrorism, and in early 1995 the UN General Assembly adopted a Declaration on Measures to Eliminate International Terrorism. Over the last decade, more than ten conventions and protocols have been signed to address this issue. Terrorism takes many forms, and therefore their manifestation is complicated by solving this problem in the world.

To counter terrorism effectively, countries around the world must unite and coordinate, perhaps even within an intergovernmental anti-terrorist coalition. The first practical and effective steps should be taken by the member states of the already established international organizations to address such issues. Their activities should focus on the political, economic and humanitarian

spheres with the involvement of special services. The main tasks of these services are the fight against terrorism and timely detection of its manifestations using specialized methods and tools.

In 1975 was formed group TREVI. Its letters are deciphered as follows: terrorism, radicalism, extremism and international violence. The group brings together justice and home affairs ministers from the European Union to fight crime, terrorism, drug trafficking and more. NATO's Special Committee, which brings together Alliance's power bloc ministers, addresses counterintelligence and counter-terrorism issues. Austria, Germany and the Benelux countries have announced their intention to step up their efforts to tackle terrorism and organized crime. It is for this purpose that the countries have decided to create a single database on persons suspected of involvement in terrorist acts and their membership in organized criminal groups. It is assumed that this database will also contain information about the DNA and fingerprints of these individuals.

The European Union's intelligence policy on these issues is quite fruitful, despite the skeptical assessment of the possibilities for deepening cooperation between the intelligence services of European countries, expressed by some politicians and representatives of the intelligence services themselves. The main conclusion of experts to address this issue is when terrorist activity has intensified. The European Union's intelligence policy has been quite effective, meaningful and well thought out, which is a necessary component of today. The adopted course of the European Union in solving the problems of terrorism, even without the formation and formation of single pan-European special services, depends on the practical results of the special services of member states in the fight against terrorism.

1.2.7. Global automation of production. Advantages and disadvantages of implementing artificial intelligence in the global economic space

Production automation is accelerating worldwide. In 2018, there were 74 jobs in the manufacturing industry per 10,000 people; for comparison, in 2015 there were only 66 units [17]. The average density of robots in Europe was 99 units, in America - 84, in Asia - 63 units. Top 10 most automated countries in the world: South Korea, Singapore, Germany, Japan, Sweden, Denmark, USA, Italy, Belgium and Taiwan [18]. This is evidenced by statistics from around the world in 2017, published by the International Federation of Robotics [18]. "The density of robots is ideal for comparison to take into account the differences in the degree of automation of the manufacturing industry in different countries," says Junji Tsuda [18], president of the International Federation of Robotics. According to his research, as a result of the large volume of robot installations in recent years, Asia has the highest rate of economic growth. Taking into account 2010 and 2016, the average annual growth rate of robot density in Asia was 9%, in America - 7%, and in Europe - 5% [17; 18].

The development and implementation of robots in China has been the most dynamic in the world. Due to the significant increase in the installation of robots, especially between 2013 and 2016, their density increased from 25 units in 2013 to 68 units in 2016 [17, 18]. The Chinese government's strategy is to sell a total of 100,000 domestic industrial robots by 2020 (worldwide in 2017, 27,000 units were sold by Chinese suppliers and 60,000 by foreign robot suppliers) [17, 18]. The Republic of Korea, since 2010, has the highest density of robots in the manufacturing industry [17] - this figure is eight times higher than the world average and is 631 units [17]. The country has a high rate of growth in the installation of robots, particularly in the electrical / electronics and automotive industries.

In 2016, Singapore ranked second in the world in the number of installed robots (488 units per 10,000 employees). About 90% of

robots are installed in the electronic industry of Singapore [17]. Germany took 3rd place (309 robots), Japan - 4th place (303 robots) were installed per 10,000 workers in the manufacturing industry [17; 18]. In general, Japan dominates the world in the production of industrial robots, as the production capacity of Japanese manufacturers reaches 153,000 robots per year. Beginning in 2016, statistics show a record and fairly rapid increase in the level of robot density. As of 2019, manufacturers in Japan provide approximately 52% of global robot supplies [18]. The workload in the United States increased significantly in 2016 and amounted to 189 robots [18]. The country ranked seventh in the world.

Since 2010, the United States has modernized domestic production and increased sales of robots. The main driver of the growing density of robots in the United States was the automation of production in order to strengthen American industry in the world market. The automotive industry is still in the lead, so the United States is the main consumer of industrial robots - about 52% of total sales in the world in 2016 [18]. Sales of robots in the United States have continued to grow since 2017 and will grow by 2020 by at least 15% on average per year [17].

The workload in Canada in 2016 increased to 145 units (the country ranked 13th in the world) [18]. The growth was mainly due to the installation of robots in the automotive industry. Mexico is primarily a manufacturing centre and supplier to automakers and auto parts manufacturers that export robots to the United States and increasingly to South America. The automotive industry in 2016 in Mexico represented a share of up to 81%. The density of robots is 33 units, still below the world average (74 units), ranking 31st in the world [18].

In Europe, the most automated country is Germany, which ranked 3rd in the world with 309 robots. The annual stock and operational stock of industrial robots in 2016 accounted for 36% and 41% of total robot sales in Europe, respectively [17]. From 2020, annual supplies to Germany will continue to grow by at least 5% on

average per year amid growing demand for robots in the automotive industry [18].

France had 132 robots (ranked 18th in the world) in 2016, well above the world average (74 jobs), but relatively low compared to other European Union countries. Members of the European Union such as Sweden (223 units), Denmark (211 units), Italy (185 units) and Spain (160 units) have a higher degree of automation using industrial robots in the production segment [17; 18]. France is in the process of restoring competitiveness in manufacturing. This may to some extent contribute to the installation of new robots in the next few years. In 2017, the number of installed robots in France increased by about 10%. Since 2018, the average annual rate of robot density has increased to 10% [18].

The UK has a robot density of 71 units, below the world average (74 units) and ranks 22nd in the ranking in 2016 [17; 18]. The low density of robots indicates the need to attract investment and increase productivity. The country has many proposed investment plans to expand capacity and modernize foreign and domestic car companies. UK companies usually hold back investment due to uncertain customs duties.

In some Eastern European countries in 2016, according to the number of robot units, Slovakia had 135 units (17th place in the world), Switzerland - 128 units (19th place in the world), the Czech Republic ranked 20th globally out of 101 unit of robots. The supply of robots in the Czech Republic and Slovakia mainly depends on the demand in the automotive industry. Slovenia is the most successful among the Balkan countries with 60% of the total, the supply of robots is carried out mainly in the automotive industry (387 units of robots, which are 33% more than in 2015).

The number of installed industrial robots per 10,000 employees in 2016 and the average value is shown in Fig. 1.6.

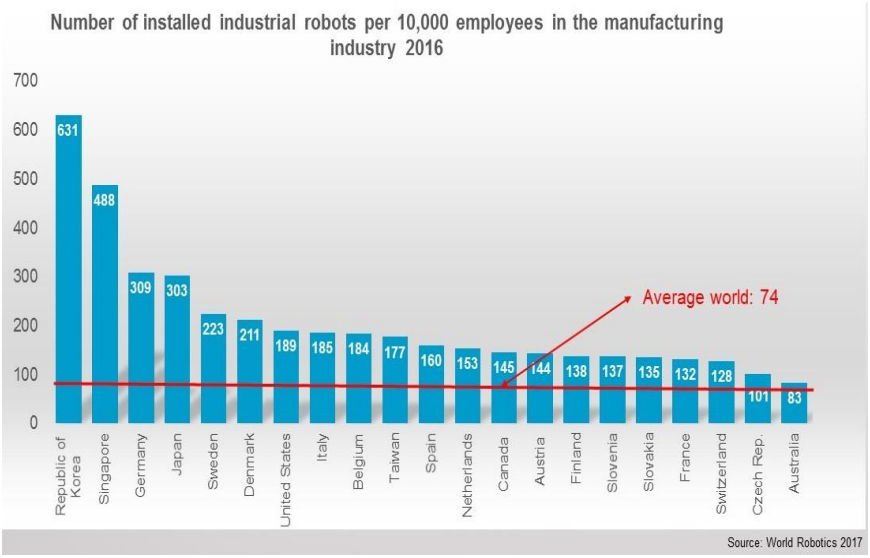

Fig. 1.6. Number of installed industrial robots per 10,000 employees in 2016 [18]

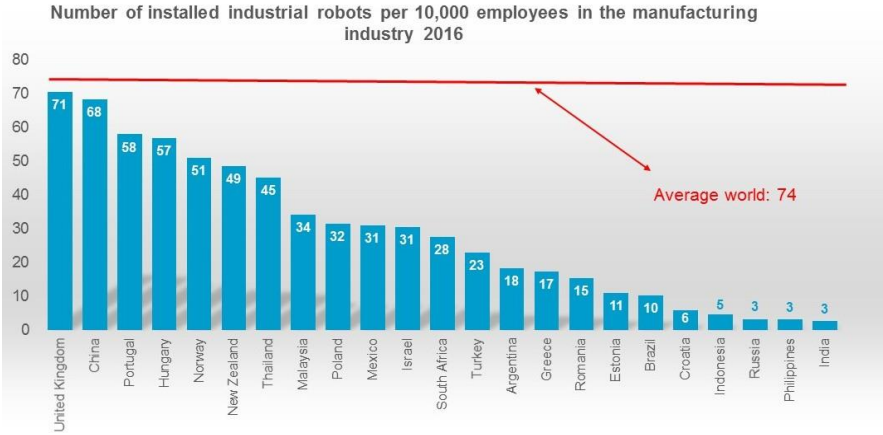

Fig. 1.6. End (see also p. 45) [18]

Effective automation of production in the world is carried out through the mechanisms of the global market of technological resources. The normative and legal basis of the mechanisms of functioning and implementation of international technology exchange is provided by: International Code of Conduct in the field of technology transfer; WTO Agreement on Aspects of Intellectual Property Rights; Technology Transfer Committee of the United Nations Conference on Trade and Development; World Intellectual Property Organization; Export Control Coordination Committee; Meeting of security and technology experts.

The main technology channels are: in-house (foreign branches of TNCs), inter-firm (under licensing, cooperation, management and other long-term agreements with foreign firms), foreign trade (including export supply of machinery, equipment and other industrial products).

Questions for self-study

1. Problems related to armed conflicts in the world and the impact of these problems on the world economy and the economy of Ukraine.
2. Modern armed conflicts in the world.
3. Ranking of countries by level of terrorism.
4. Causes of terrorism.
5. The problem of nuclear disarmament.
6. The global problem of overcoming the backwardness of developing countries.
7. Food issues: the global dimension.
8. The structure of nutrition in different countries.
9. Geography of hunger.
10. Side effects of the rapid development of science and technology.
11. Robotization in society: positive and negative consequences.
12. Space exploration: advantages and disadvantages.
13. The shadow economy and its implications for the global economy.

Tasks for testing knowledge

1. Define the global problems of mankind.
2. Classify the global problems of mankind.
3. Justify the impact of production automation on the economic development of the world.
4. Explain which alternative energy sources countries should choose to minimize harmful emissions into the atmosphere. Justify the economic component of the selected types of energy.
5. How to achieve peace between countries and solve the global problem of terrorism?
6. List the types of terrorism and describe them.
7. What do you know about global food issues? Suggest ways to solve them.
8. Justify your opinion on the need to disarm countries and their renunciation of nuclear weapons.

Section 2
GLOBAL MARKETS. MECHANISMS OF THEIR FUNCTIONING

2.1. Global market: essence, structure and mechanisms of functioning

- Stages of evolution and the essence of the global market.
- Structure and functions of the global world market.
- Entities and objects of the global market.
- Mechanisms of functioning of global markets.
- Assessing the level of market globalization.

2.1.1. Stages of evolution and essence global market

In a broad sense, the global market is a system of exchange of goods and services between countries, which arose on the basis of the international division of labour and international monetary and financial relations [19]. In a narrow sense, the global market is a set of national markets of individual countries that are interconnected by international economic relations [20].

There are the following stages of evolution of the global market (by the formation of markets and the gradual transition to the global market): the domestic market; national market; international market; world market; global market. The world market was formed in the late XIII century as a result of intensified trade between countries.

The formation of the world market began in the XV-XVII centuries, and ended in the XIX-XX centuries.

The global market as well as the global economy at the beginning of the XXI century are already integral (not fragmentary, as in the early XX century), diversified, multilevel hierarchical systems, covering a set of international forms of science, technology and production, circulation of various goods and services, capital and labour [21].

2.1.2. Structure and functions of the global world market

Global markets are the dominant functional structures of the modern world, i.e. the global economic system, which together with international communication and information systems and numerous actors engaged in international economic activities and relevant international economic policy, actually make the world or international economy global [20; 22].

The global market is the highest stage of development and transformation of a market global economy. Its main characteristic is not only the international movement of goods, but also capital and the movement of factors of production between countries in the global environment.

The global world market is a market system in which, taking into account the object of purchase and sale, we can distinguish three major groups of global markets:

1) global world commodity market (consumer goods market, means of production market, services market);

2) global world financial market (investment market, money (currency) market, loan capital market);

3) global (international) labour market.

The main function is the implementation of interstate movement of goods, services, factors of production, financial resources on a global scale [23].

The global market primarily provides [24]:

a) optimizing the use of factors of production in the global environment;

b) informing producers and consumers about the availability and price of goods;

c) objective assessment of production activity, taking into account international, world standards and criteria of product quality.

2.1.3. Subjects and objects of the global market

The subjects of any global market are government agencies at the central, regional and municipal levels. Entities also include enterprises, individuals, and various organizations, associations, including international and multinational corporations. For example, an entity may be an international organization in the case of financial or investment funds (in the form of aid) to a country. If we consider the actors at the macro level of the global market, it is national economies, institutions-regulators of the global economy, which should include international organizations (World Trade Organization, International Monetary Fund, World Bank, etc.). Thanks to these institutions, the foreign economic activity of states in the global market is regulated. The subjects of the micro level of the global market are individuals, individuals, businesses, firms, multinational corporations, transnational banks, etc.

The main objects of any global market are goods (resources, products and services) that circulate in international trade, and therefore the subjects and carry out their foreign economic activity [20; 21; 22; 23; 24].

According to the objective feature, the following segments are generally distinguished in the structure of the global world market (a slightly different configuration and structuring is possible):

- ✓ the market of goods and services, including scientific and technical (within a certain market can be distinguished market of technology and knowledge);

- ✓ the market of goods and services, including scientific and technical (within a certain market can be distinguished market of technology and knowledge);
- ✓ labour market;
- ✓ foreign exchange market.

2.1.4. Mechanisms of functioning of global markets

The mechanisms of the global market in the context of its structural elements are a set of forms (international, commodity and currency exchanges, multinational corporations, the International Monetary Fund, the World Bank, the International Bank for Reconstruction and Development, etc.), methods (international trade in goods and services, international labour migration, international capital movements, international movement of loan resources, international technology transfer, etc.) and funds (exports, imports, direct and portfolio investments, international credit, patents and licenses, currency conversion, world money, etc.) to ensure the functioning of global markets, i.e. the movement of goods and services, capital (investment), securities, labour [20; 21; 22; 23; 24; 25].

Due to the information about the financial technologies of the foreign exchange market, the formation and setting of currency prices within the global level of the world economy [26].

The mechanisms of functioning of global markets include:

1) infrastructure of global markets, including international communication and information systems (for example, SWIFT a global telecommunications network that integrates the international monetary and financial system into a global organic integrity, gives it the features of a global character), which transform the traditional global market on the global in the full sense of the term [19; 20; 21];
2) movement of goods and services on a global scale (international turnover, world trade, namely: export/import),

international exchange (transfer) of technology, international movement of capital (foreign direct investment, portfolio investment), international movement of loans (international credit), international movement of currencies, international movement of labour resources (international labour migration); specific market means, instruments through which these movements-processes take place, which, in fact, reflect the content of the functioning of markets on a global international scale: exports, imports, foreign direct investment, portfolio investment (securities movement), international credit, venture business, as well as world prices, currency conversion, the international monetary system, which consists of two main blocks: reserve national currencies and supranational currencies, world or world currencies, world money (as the main link of the international monetary system), etc. [20; 21; 25; 26].

2.1.5. Assessing the level of market globalization

Most researchers in the theory and practice of the world economy suggest assessing the level of globalization of markets on such indicators [20; 21; 26; 27]:

1) the volume of internationalized (international) production of goods and services and its growth rate compared to the volume and growth rate of gross domestic product in the world;
2) the volume and dynamics of foreign direct investment compared to the volume and dynamics of all investments (domestic and international);
3) the volume and dynamics of international centralization of capital (in the form of mergers and acquisitions between countries) compared to general data on centralization of

capital (including mergers and acquisitions within the country);
4) volume and dynamics of large, complex international investment projects (project financing) in comparison with the general scale of similar projects (both domestic and international), as far as available statistics allow;
5) the volume of all international trade in goods and services and its growth rate compared to gross product;
6) data on international transactions with patents, licenses, know-how;
7) the volume and dynamics of international operations of banks and other credit institutions in comparison with the total volume and dynamics of all their operations;
8) 8) the volume and dynamics of international stock markets compared to the total size of such markets and their growth rates (portfolio investment: general and international), and it is advisable to distinguish between major segments of these markets: bonds and other debt (public and private), stocks, derivative securities (futures, options), swap transactions;
9) the volume and dynamics of foreign exchange markets compared to the general scale of money markets.

2.2. Functioning of the global market of goods and services

- Formation of the global market of goods and services.
- The structure of the global commodity market as a multilevel system.
- Mechanism of functioning of the global market of services.

2.2.1. Formation of the global market of goods and services

Consider the interpretation of the essence of key concepts such as "goods" and "service". The product is a product of production and economic activity of the enterprise. It acquires a material form and is the object of purchase and sale on the market. The product has the following properties - value and exchange value (the ability of the product to be exchanged for other goods/funds). Thanks to goods and services, the consumer is able to meet their needs. This property of the product is called consumer value. A service is an activity that is aimed at meeting certain needs of a person or society as a whole. The concept of "service" can also be interpreted from the standpoint of the transaction, which not only transfers ownership of the object, but also provides for the implementation of a list of necessary tasks and obligations of the manufacturer to the consumer of the service.

The formation of the global market for goods and services was due to several factors:

1) strengthening the processes of internationalization and the development of the international division of labour;
2) scientific and technological revolution and scientific and technological progress have contributed to the formation of new sectors of the economy in many countries. It also prompted the reconstruction of existing industries and the need to renew fixed capital;
3) the emergence, formation and effective development of transnational companies and their active participation in the world market;
4) development of international trade and formation of regulatory framework for its regulatory processes (for example, development and signing of the General Agreement on Tariffs and Trade, which is enshrined in the World Trade Organization);

5) reduction of customs duties on certain types of goods and the abolition of quantitative restrictions on imports between some countries, which contributed to the creation of free economic zones and liberalization of international trade;
6) strengthening integration processes and developing trade and economic integration between countries, which has enabled countries to reduce or eliminate barriers to trade and form common markets between them;
7) the emergence and creation of new industrial countries, whose economic development strategy is aimed at developing foreign markets and gaining political independence of the colonial countries of the world.

2.2.2. The structure of the global commodity market as a multilevel system

Today's global commodity market is a system with certain levels, such as higher, medium, lower. For example, the *highest level* covers goods that should be attributed to the market of high-tech products, i.e. in this market is the exchange of high-tech goods. It also includes goods of scientific industries and intangible production. The market of high technologies includes various goods of electrical equipment, aerospace technology, office equipment and telecommunications equipment, medical and pharmaceutical equipment, etc. The *middle level* covers ready-made labour-intensive products and semi-finished products. This level includes low-tech (building materials, light industry, ferrous metallurgy and textiles) and medium-tech (chemicals, rubber and plastic products, machines, vehicles and others). The *lower level* of the global commodity market consists of basic goods of the mining industry and agricultural products.

The structure of the global world market is shown in Fig. 2.1 and the explanation of each aspect is shown in detail in Fig. 2.2–2.4.

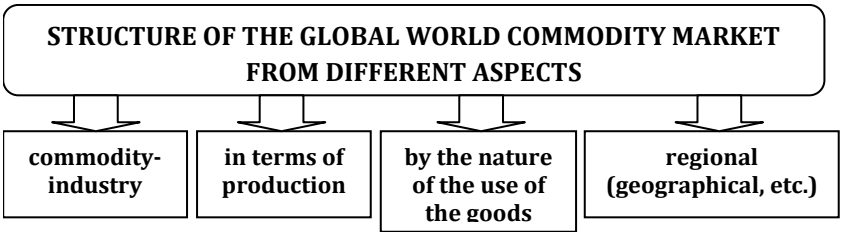

Fig. 2.1. Aspects of considering the structure of the global commodity market

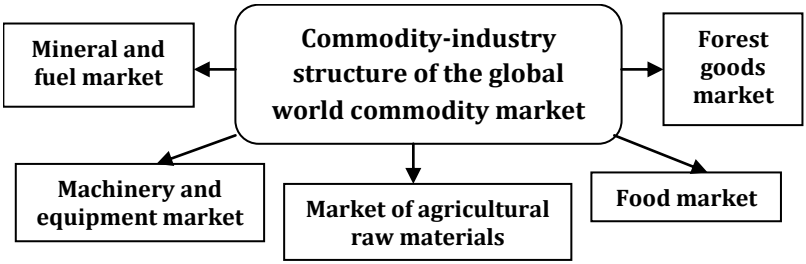

Fig. 2.2. Commodity-industry structure of the global world commodity market

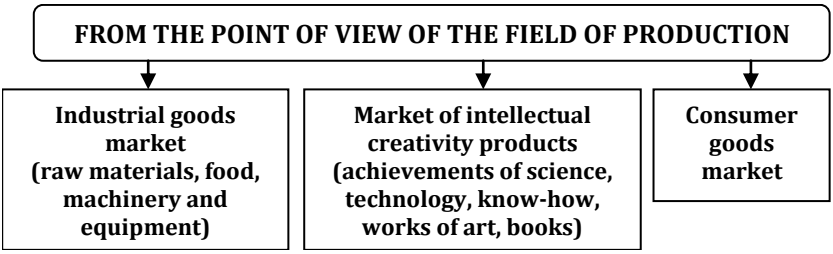

Fig. 2.3. The structure of the global world commodity market in terms of production

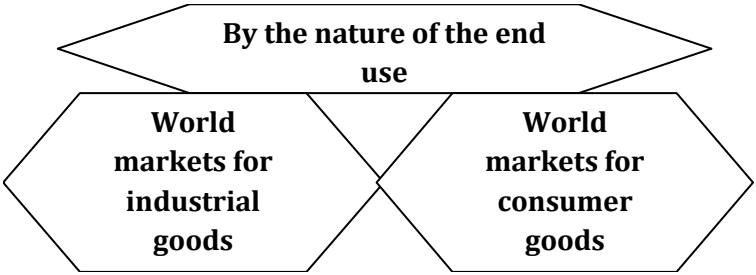

Fig. 2.4. The structure of the global world commodity market by the nature of end use of goods

Consider the two main sectors of global commodity markets and their types:

1. ***Closed*** is a commodity market in which sellers and buyers interact, which are not purely commercial. Non-profit relations between them develop only partial participation or participation in financial control. Special trade and economic, currency and credit, and even military-political specific agreements are concluded. Segments of the closed market are intra-firm deliveries of goods for example, between branches or subsidiaries and the head office of a global corporation or the supply of products between affiliates. This market is characterized by special trade under long-term contracts concluded between countries or within the framework of assistance between countries (which have experienced natural disasters, floods, volcanic eruptions, tornadoes or other global problems).

2. ***Open*** is based on the sphere of ordinary commercial activity, ie it includes an unlimited number of independent buyers and sellers. Current prices in the open global commodity market are reference.

The main criterion of the main commodity markets is the nature and degree of freedom of competition. Based on this criterion, the following types of markets are distinguished [28]:

- market of perfect (free) competition;
- pure monopoly market;
- market of monopolistic competition;
- oligopolistic market.

The tools of the mechanism of functioning of modern global commodity markets (as well as services markets) are formed by the following ***methods of trade*** [29]:

1) direct export/import;
2) indirect export/import (through intermediaries-agents, distributors);
3) cooperative export/import;
4) counter trade;
5) international auctions, exchanges and auctions;
6) electronic commerce (e-commerce).

Consideration of the geographical representation (structure) of international trade in the global market shows the distribution of trade flows according to territorial and organizational characteristics between certain groups of the world. Territorial geographical structure of trade is based on the systematization of countries belonging to a particular group or part of the world. For example, groups of industrialized countries or countries in Africa, Asia and Europe.

Organizational geographic structure shows the distribution of the global commodity market either between countries that belong to separate integration and other trade and political associations (European Union countries, CIS countries), or between countries selected in a certain group by one or another analytical criterion (countries - oil exporters, countries - net debtors) [28].

An element of the mechanism for ensuring the formation and functioning of the global commodity market is international trade regulation, which takes place through multilateral intergovernmental agreements within the World Trade Organization, and especially the General Agreement on Tariffs and Trade to reduce restrictions on international trade [30].

The main prerequisites for the creation of this market are the deepening of the international division of labor, high economic development, rising living standards in many countries.

2.2.3. The mechanism of functioning of the global market of services

International trade in services is a key component of the mechanism of functioning of the modern global market of goods and services, covering a significant sector of world trade and is a complex of diverse economic activities [21].

According to some experts, at the end of the XX century services reached 70% of world GDP. This area employs about 65% of the working population of the planet (in the US - up to 75%). According to statistics [16], the share of services in world trade in goods and services in 1980 was 16.6% ($ 0.395 trillion). In 2006 - 19.5% (2.91 trillion US dollars) and at the end of 2015 - 25%, which indicates a significant absolute increase [16].

International trade in services covers the international exchange of many types of services (each of them has its own characteristics). According to the General Agreement on Trade in Services, services provided by international trade channels are (according to the sectoral classification developed by the World Trade Organization Secretariat, services are divided into 12 sectors with 54 subsectors, in turn, subsectors include 161 activities) [31]:

1) business/professional (managerial, computer and similar, services in the field of R & D, real estate sales and rentals, services for leasing and renting of machinery without operators, consulting, etc.);
2) communication services (postal, courier, telecommunication);
3) construction services and related engineering services;
4) services of distributors;
5) services in the field of education;
6) environmental protection services;
7) financial services;
8) health care services;
9) recreation services;

10) services for the organization of cultural and sporting events;
11) services related to tourism;
12) transport services.

The mechanism of functioning of international trade in services has certain features:

– regulated not at the border, but within the country by the relevant provisions of domestic law;

– services are not subject to storage (produced and consumed at the same time);

– the production and sale of services are more protected by the state than the sphere of material production and trade;

– international trade in services is closely related to trade in goods and significantly affects it;

– not all types of services, unlike goods, can be traded (especially those that are for personal consumption). Tourism, healthcare, education, culture and the arts have great potential in international trade in services.

The General Agreement on Trade in Services within the World Trade Organization does not define "services" as a category - there are heterogeneous economic activities that cover this term, and only states that services can be provided in one of four ways (Table 2.1).

The global services market is divided into separate, narrower markets. Today the most important place among them is occupied by the world market of licenses, know-how, patents (this market can be attributed to the market of intellectual property and the market of technology and knowledge), engineering and consulting services.

A significant part of engineering consulting services is an integral part of contractual supplies of machine-building products, construction of facilities abroad, etc. At the same time, services on design, consulting, construction of economic capacities are realized. The world market of transport services and the market of tourist services have been widely developed. Among other types of the world market of services it is the world market of advertising, insurance services, the world market of the software. [30]

Table 2.1

Models (methods) of providing services[1]

Models (methods)	Criteria	The presence of the provider
Model 1: Cross-border provision of services	The service is provided in the territory of a member state from the territory of another member state	The service provider is not present in the territory of the consumer's member state
Model 2: Consumption abroad	The service is provided outside the territory of the Member State of the service provider to the recipient of the service in the territory of its Member State	The service provider is not present in the territory of the consumer's member state
Model 3: Commercial presence	The service is provided in the territory of a Member State through the commercial presence of the service provider	The service provider is present in the territory of the consumer's member state
Model 4: Presence of an individual	The service is provided in the territory of a member state, the service provider is available as an individual	The service provider is present in the territory of the consumer's member state

[1]Source: systematized on the basis [31; 32].

There is currently no unified classification of services, which is a very important issue. According to the recommendations of the Organization of the Petroleum Exporting Countries (OPEC) and the United Nations Conference on Trade and Development (UNCTAD), all services are classified into five categories: 1) financial; 2) information (communication); 3) professional (production); 4) tourist; 5) social.

The International Monetary Fund offers the following classification of services: maritime transport; other modes of transport; travel; other private services; other official services. The most detailed classification of services is provided by the World Trade Organization. The global services market is an extensive system of specialized markets, including the market of transport services, communications, utilities, catering, tourism and recreation services, hotel business, advertising and consulting services, insurance and financial, agency and brokerage services, legal services, realtors , franchising services [33].

In balance of payments statistics, world trade in commercial services is in fact reduced to two ways of providing services: cross-border and consumption abroad. However, the real volume of world trade in services is much higher. International statistics do not fully take into account trade in services between foreign and national legal entities and individuals [34]. The leaders in the service sector are the eight most developed countries, approximately 70% of world exports of services and imports of 50%. The four largest countries in the world account for 44% of exports of services: the United States, Great Britain, Germany and France [31].

Until recently, the market for services (excluding finance) was dominated by small and medium-sized firms. Today, multinational corporations have entered this market and put telecommunications facilities at work, creating a global information transmission system.

2.3. Mechanisms of functioning of the global financial market

- Characteristics of market participants and their classification.
- Structure and functions of the global financial market.
- International credit as the main tool of the mechanism of functioning of the global financial market of loan capital.
- Global capital and investment market.
- Global currency market and the mechanism of its functioning.
- Innovations in the global financial market.

2.3.1. Market participants: characteristics and classification

Consider the characteristics, participants, their classification, structuring and functions of the global financial market.

The global financial market is a system of markets that ensure the accumulation and redistribution of international financial flows.

Characteristic features of the global financial market [32; 35]:

- ✓ large amount of financial resources and operations;
- ✓ globality is the absence of territorial restrictions;
- ✓ round-the-clock mode of operations;
- ✓ involvement of entities with a high reputation in operations;
- ✓ a wide range of financial instruments used;
- ✓ unification of rules and standards of operations;
- ✓ high level of information technology use.

Participants in the international global financial market are divided into four classes:

1. Investors are the owners of free funds who invest in the relevant assets (dominated in this class by the amount of accumulated money pension funds and insurance companies).

2. Financial institutions that act as intermediaries between creditors and borrowers (banks, brokers, dealers, etc.).

3. Governments that regulate financial markets by influencing the exchange rate mechanism and controlling the state of their country's economy through fiscal and monetary levers (primarily through interest rates) [36].

4. Corporations, which often act as borrowers of capital, in order to improve or expand their own production activities.

Participants in the global financial market are classified according to the following characteristics:

1) by the nature of the participation of entities in operations: direct (market makers); indirect, indirect participants (market users).

2) for the purpose and motives of market participation: hedgers, speculators, arbitrageurs.

3) by types of issuers: international and international agencies (World Bank, International Bank for Reconstruction and Development, European Bank for Reconstruction and Development); national governments and sovereign borrowers; provincial and regional governments; municipalities; corporations; banks and other organizations [37].

4) by countries of origin (developed countries; developing countries; international institutions; offshore centres) [38].

5) by types of investors: private; institutional [39].

2.3.2. Structuring and functions of the global financial market

The main functions of the global financial market are: ensuring international financial liquidity, i.e. the ability at the supranational level to quickly attract financial resources, assets, cash flows in various forms and on favourable terms; ensuring the international movement of capital, i.e. enabling market participants (firms, governments and households, individuals) to invest financial resources in long-term investments.

The main objects of the global capital market are short-term loans of up to one year. It also provides resources for speculative transactions in securities and consumer goods. The objects of the global financial market also include financial resources, assets, cash flows, funds. All transactions conducted in the global financial market can be grouped according to the terms of realization of property rights: short (up to one year) and long (more than one year), respectively, it is divided into money (currency) and stock market (capital market).

The capital market has the following sectoral distribution: the credit market, the movement of capital on it occurs in accordance with the conditions of urgency, return and interest payments; securities market with differentiation of the latter in terms of dominance of a financial instrument (stock market, bonds, derivatives) [40; 41].

Thus, according to the institutional and infrastructural components, the global financial market consists of banks, stock exchanges and financial institutions. As a result of these entities, the global market flows the movement of global financial flows and redistributes financial resources in the form of cash assets between intermediaries, creditors and borrowers. The structure of the global international financial market is shown in Fig. 2.5.

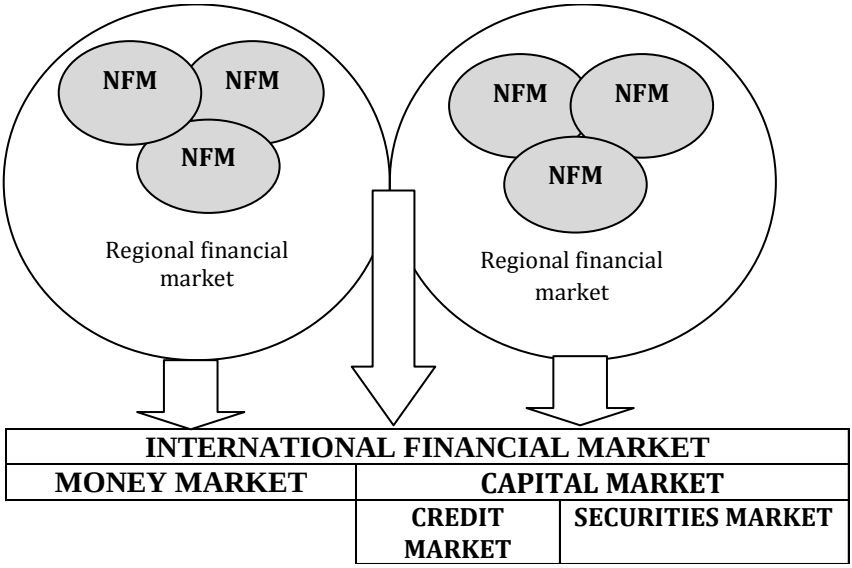

Fig. 2.5. The structure of the global international financial market

Agents of the global financial market are multinational banks, multinational corporations, investors, financial institutions, pension funds, insurance companies, investment funds, including mutual funds. The key role of the operational "platform" in the mechanism of ensuring the functioning of global markets is played by international financial centres, which focus on the world's largest banks and specialized credit and financial institutions. Various currency, financial and credit operations, both with securities and with gold, are carried out on these sites. In recent years, along with the leading "classic" global financial centres of New York and London, a large number of new international financial centres have appeared in the world. Factors determining the status of these cities as centres:

- developed financial infrastructure;
- effective functioning of financial exchanges;
- concentration of highly qualified employees;
- developed modern telecommunication network;

- transparent and perfect legal system;
- favourable investment and tax climate;
- low level of corruption and others.

Among the major international regional financial centers are two Swiss - Geneva and Zurich. Their main activities are the provision of private banking services, customer service and insurance. At the beginning of the XXI century, international financial centers are growing in the countries of Asia, where the main stock trading takes place: Shanghai, Tokyo, Hong Kong, Singapore. In recent years, the Dubai Financial Centre has developed, which has all the characteristics of an offshore financial centre [20].

An offshore financial centre is a part of the territory of the state where companies of foreign residents are registered and have the right to conduct trade, financial and commercial operations on preferential terms. For the international financial center to function effectively, it is necessary to ensure the movement of loan capital and other financial assets on a global scale to meet certain conditions: achieving a high level of economic development of the country; its active participation in world trade; the existence of a viable capital market and an efficient banking system; liberalization of currency and tax legislation; favorable geographical location and political stability in the country.

Considering the movement of capital in the global financial market, it is necessary to distinguish between entrepreneurial and loan capital. The main tool of the mechanism of functioning of the global financial market is international credit. It provides interstate movement of capital in the form of providing foreign exchange and commodity resources in terms of return, maturity and payment.

2.3.3. International credit as the main tool of the mechanism of functioning of the global financial market of loan capital

Considering the global financial market in which international capital flows, it should be noted that capital is divided into entrepreneurial (characterized by long-term foreign direct investment) and loan capital, which includes international loans (loans in cash and in kind). In practice, venture capital is often aimed at establishing subsidiaries, foreign affiliates, or joint ventures. The main purpose of loan capital in the form of international credit is to provide loans from one country to another with clear deadlines for the payment of interest on the loan.

International credit is a key functional element of the mechanism of the international global financial market within the overall global financial and monetary market. International credit provides interstate movement of capital in the form of providing foreign exchange and commodity resources on terms of return, maturity and payment [42].

The subjects of international credit relations are banking institutions; companies; state institutions; governments; international organizations (financial and monetary). Sources of international credit are free funds, cash flows, assets, financial resources, savings of enterprises, the state, the population. International lending by object can be divided into certain forms. For example, there are two main loans in commodity and commercial forms; monetary and banking forms. Also in practice there is a mixed form, which is implemented in corporate and bank lending.

Consider in detail the classification of international credit according to certain characteristics. On the basis of purpose loans are divided into commercial, financial, intermediate. Commercial loans serve international trade in goods and services, and financial loans are used for investment projects, purchase of securities, repayment of foreign debt, foreign exchange intervention by the Central Bank.

Intermediate lending is involved in servicing mixed forms of exports of goods and services, capital, engineering; especially often this type of loan is used in contract work. Intermediate loans are a mixed form of international credit.

According to the classification of international credit by its types distinguish between commodity and foreign currency loans. Commodity is used in the implementation of export operations related to the supply of goods on deferred payment, and foreign currency loans are issued by banking institutions in cash.

According to the technique of granting loans, they are divided into cash, acceptance, deposit (certificates), bond loans and consortium loans. If a loan is provided by two or even more creditors to one borrower, it is called a consortium, because the creditors may be unions.

According to the classification of "foreign currency loan" international loans are distributed according to the currency in which the loan was granted. For example, in the currency of the creditor country, or in the currency of the debtor country, or in the currency of a third country in general, or using the international unit of account SDR, EURO or other currencies.

According to the term of the loan, the loans are the shortest (up to 3 months); short-term (up to 1 year, maximum up to 1.5 years); medium-term (1-5 years) and long-term (5 years and more) [42].

On the basis of the security of international credit, they are secured and blank loans, and according to the object of credit investment or non-investment. It is also worth noting that international credit is used in leasing, factoring and forfeiting operations, etc. International loans are divided into direct and portfolio, private and public.

International credit for functional purposes should perform the function of providing and mobile redistribution of borrowed capital between countries around the world to meet their economic needs and save costs, using credit in the form of checks, transfers, bills, drafts and more. The use of international credit allows you to develop

a non-cash form of payment and quickly carry out non-cash transactions.

International credit allows to accelerate the concentration of capital in the necessary sectors of the economy and to effectively centralize it by attracting foreign loans. Including effective regulation of the state economy through the use of the latest economic and market methods and accelerate the development of productive forces.

2.3.4. Global world capital market and investment

The global capital market belongs to the segment of the global financial market and all the mechanisms of its functioning are based on the establishment of international economic relations between the countries of the world that are owners of capital and consumers. These relations arise due to the exchange of capital migration and its use in world markets. The global capital market is divided into the market of venture capital and loan capital.

Considering the global market of entrepreneurial capital, it should be noted that it is based on the realization of investments in the long run. The global loan capital market is characterized by investing in securities such as stocks, bonds or certificates. Their exchange takes place mainly on stock exchanges, so this market is also taking the form of the global securities market.

The main purpose of venture capital is revealed in two main forms: direct and portfolio investment. Foreign direct investment includes entrepreneurial income, profits and investments of investors in long-term projects, investor control over its investments. According to the United Nations, what is direct investment in the system of national accounts is an investment, including primary, equity outside their country; reinvestment, i.e. a certain part of the income from the object of investment, which does not pass to the investor and remains in the host country; intra-corporate transfers in the form of loans or transfers, which are distributed between direct investors and subsidiary corporations, branches, associations.

Factors of international direct investment are global economic; general economic; resource and economic; political and economic and others. Global economic factors are the level of development of the international economy, international markets, international relations between countries, development of international investment infrastructure, strengthening the process of transnationalization and regional integration, development and stability of the world economy and others. General economic factors are the level of taxation, the state of the balance of payments, the ratio of consumption and savings in countries, the interest rate, the level of inflation and more. Resource and economic factors include such as the geographical location of the country, the quality of natural resources and their availability, the level of demographic development.

Political and economic factors are the political stability of the country; investment climate and attracting foreign investment; control and effective regulation by the government of economic processes in the country; corruption of power; ability to adhere to bilateral and multilateral agreements and more.

The infrastructure of the global capital market, the institutions that refer to it - are credit institutions, investment funds, companies, enterprises, public organizations (issuers), investment banks. The functional responsibilities of credit institutions are based on the acceptance of deposits and the need to meet the needs of investment lending and business between clients and the exchange. Investment banks reduce the risk of securities trading programs.

2.3.5. Global currency market and the mechanism of its functioning

The global foreign exchange market is a component of the global financial market. It carries out transactions for the purchase and sale of foreign currency, securities in foreign currency, foreign exchange investment [43]. The subjects of the global foreign exchange market include states, enterprises, which can be both exporters and

importers; banks, including transnational, international and national financial institutions, foreign exchange brokers, individuals, etc.

The global foreign exchange market is based on a monetary system that must continue to function and develop. Such a market regulates international monetary relations between its subjects. The currency system covers a set of monetary relations between countries on the basis of intensification of internationalization and integration of economic development of the world. The integration of countries is enshrined in international treaties between countries.

Consider the differences between national, international and global monetary systems. The national monetary system provides for the organization of monetary relations of countries, the formation of which took place historically and was enshrined in legislation in accordance with the legal framework of the country, also took into account international customs and laws. The international (regional) monetary system is a form of organization of monetary relations of the states of a certain region. Such a monetary system is established by international financial and credit institutions, and it is enshrined in international agreements. The difference between the global monetary system and the international one is that it is a form of organization of monetary relations that operates within the world economy and is enshrined in multilateral intergovernmental agreements, and to regulate it involves monetary and financial and international organizations. The development of the above-mentioned monetary systems depends on the effective functioning of the monetary mechanism, which is a set of legal norms and instruments, incentives, motives, principles, means and factors of influence (both internal and external). The main elements of the mechanism function both at the national and international levels.

The main functions of the global monetary system, which is able to ensure the effective functioning of the entire global foreign exchange market are to ensure the estimated turnover during international foreign exchange transactions; implementation of indirect international economic relations between countries; creating and providing favorable conditions for the effective sale of goods and

export-import operations; control and coordination of national currency systems; application of unified rules and standardized norms and principles of monetary relations between the countries of the world on a global scale.

In its development, the world monetary system and the global foreign exchange market have gone through several stages: the Paris monetary system (from 1867 to 20 years of the XX century); Genoese monetary system (from 1922 to 30 years of the XX century); Bretton Woods monetary system (from 1944 to 1976); Jamaican monetary system (1976-1978); European Monetary System (since 1979) [40].

In the process of evolution, the world monetary system and the global foreign exchange market have changed and improved their elements: functional forms of money (gold, reserve currencies, international regional currencies); terms of mutual currency conversion; regime of currency parities and exchange rates; degree of currency regulation and volume of currency restrictions; forms of international settlements; international bodies regulating currency relations [41].

Organizationally, the modern foreign exchange market is a global electronic network of commercial banks around the world that buy and sell foreign currency for national. Currency trading in the foreign exchange market is not tied to one geographical point and does not have a fixed opening and closing time. The foreign exchange market is often called the forex market, i.e. the foreign exchange market [21].

The foreign exchange market is a component of the sphere of circulation of national, international, regional and global world economies, in which trade in national and supranational currencies serving international payments [20]. The functions of the global foreign exchange market, as well as any other, are as follows: regulatory, stimulating, distributive, integration, information, mediation, rehabilitation, allocation. It should be noted that the foreign exchange market provides services to the international turnover of capital, goods and services in the global foreign exchange market. The market also forms an exchange rate that takes into

account the supply and demand for goods and services. The market provides entities with mechanisms for protection against currency risks during international settlements. The subjects of the foreign exchange market are commercial banks; companies; central banks; private individuals; currency exchanges and brokerage firms Objects are financial resources, cash, assets, etc.

2.3.6. Innovations in the global financial market

The expansion of the functions of credit institutions and the emergence of new types of bank settlements have given impetus to innovative developments in the global financial market. Global financial innovations concern the international loan capital market and are based on the formation of the latest innovative financial forms and hybrids of currency, credit, financial instruments and international currency transactions.

In the derivatives market, financial innovation instruments and derivatives are the introduction of contracts such as futures and forward contracts; swaps (currency, interest rate, asset swap); options; warrants for the purchase of shares and bonds (additions to the debt instrument). The innovations of the global securities market include the following: international securities, European securities, Euro stocks, Euronotes, Eurobonds. They were the product of the globalization of securities markets through international financial centers [20].

A forward contract is concluded between two parties and is based on the supply of the subject of the contract (usually funds) in the future. It is concluded off-exchange and is not standard. It is a firm agreement that is binding. Forward contracts are usually not liquid. Unlike forward contracts, futures contracts, on the other hand, are concluded on an exchange, i.e. the terms of the contract are controlled by the exchange chamber by all parties. The Exchange develops contract terms that are standard for each type of asset and highly liquid. Accordingly, there is a wide secondary market for them. These contracts are usually entered into for the purpose of hedging and

playing on the exchange rate difference. This contract does not aim at the actual supply of the asset, i.e. it is quite rare. The futures price is fixed at the time of concluding the contract. The price at the conclusion can be higher (premium) or lower (discount) at the spot price.

The exchange of denomination and fixed interest in one currency for denomination and fixed interest in another foreign currency is a currency swap, even when there is no real exchange in practice. The need for a currency swap is due to currency restrictions on currency convertibility. Its choice is also made to reduce risks when conducting foreign exchange transactions, especially in the currency of another country and when the foreign issuer is unknown. A currency swap is also used when you need to issue bonds in the currency of another foreign country.

If global financial market participants exchange only interest payments and not denominations, this is a manifestation of an interest rate swap based on the exchange of fixed-rate debt obligations in exchange for floating-rate interest-bearing liabilities. When calculating the payment is made in one currency. By agreement, the parties may agree to exchange such obligations for several years. In this case, payments are made in a single currency. Under the terms of the swap, the parties are able to exchange payment for several years.

Using asset swaps, you can get higher income by exchanging a fixed income asset for an asset in another currency. If swaps are exchanged with a fixed payment for swaps exchanged with floating payments, this swap is called a commodity swap. Unstable processes of development of commodity markets contributed to their introduction into practice of using innovative tools. The advantage of commodity swaps is that they can be long-term and allow you to hedge currency positions indefinitely. An option is an agreement on the possibility of transferring the right and obligation to buy or sell a currency or related asset at a fixed price, which is specified at the time of concluding the contract between the parties. Delivery of currency, assets is carried out in accordance with the agreed date.

2.4. Global labour market and mechanisms of functioning

The effective functioning of the global labour market depends on the location of the economically active population in accordance with the spheres of international activity, taking into account the levels of the global economy: sectoral, territorial and vocational. The modern global labour market must embody a mechanism of agreed interests between employers and employees. Its main elements include supply and demand for labour from the economically active population.

The main sign of the emergence and formation of the global labour market was the mobility of factors of production, which is an important condition for improving the efficiency of the world and in particular the national economy. Accordingly, the influence of multinational corporations increases and promotes labour mobility and equalizes the conditions of application and selection based on the education and skills of the employee.

The International Organization for Migration considers the essence of labour migration as "the movement of people from one country to another for the purpose of employment" [44]. From the twentieth century the centers of destination, to which a large number of migrants went, were the United States, Canada, and Australia. They were later joined by Western Europe, Africa, the Middle East, and Latin America.

Labour migration includes two main components - emigration (exit) and immigration (entry). In world practice, thanks to the research of scientists, such a classification of forms of labour migration has developed. By areas: migration from developing countries to industrialized countries; migration within industrialized countries; labour migration between developing countries; migration of highly skilled labour from industrialized countries to developing countries. According to the territorial coverage, there is intercontinental and intracontinental migration. According to the

level of qualification of migrants, there are: highly skilled labour force and low-skilled labour force. In time, migration happens without return; temporary; seasonal; pendulum, and according to the degree of legality - legal and illegal [45].

Global labor migration has an economic nature, so it should be studied at the level of countries participating in the exchange of human resources, as well as at the individual level (migrant and his human capital). Let's study the world migration processes according to global indices. Country migration processes affect such key indicators of any state as the security index; index and quality of life; the index of sustainable development of the country and the index of its harmonization; index of economic freedom; index of growth of competitiveness of the country; unemployment rate; human development index, etc.

We will analyze the TOP-10 countries and compare them with the indicators of Bulgaria and Ukraine to identify problems in ensuring the sustainability of countries at the junction of K-cycles, taking into account migration processes. Let's analyze the volume of net migration, correlating the index of security of life to the index of quality of life of the country. The results are presented in Fig. 2.6. At the beginning of the study, the average value was first determined according to the indicators for the selected countries. The average value of the life safety index in the TOP-10 countries is 1,450, and the quality of life index is 1,307. It should be noted that the quality index in Iceland - 1,608, Australia - 1,605, Finland - 1,561, Canada - 1,545, Sweden - 1,539, Luxembourg - 1,539, Denmark - 1,483. In these countries, the value of the life safety index exceeds the average value in the studied countries. The life safety index is lower than the average value only in Switzerland - 1,439, which is 0.225 more than in Ukraine (1,214) and 0.235 more than in Bulgaria (1,204) [16; 46].

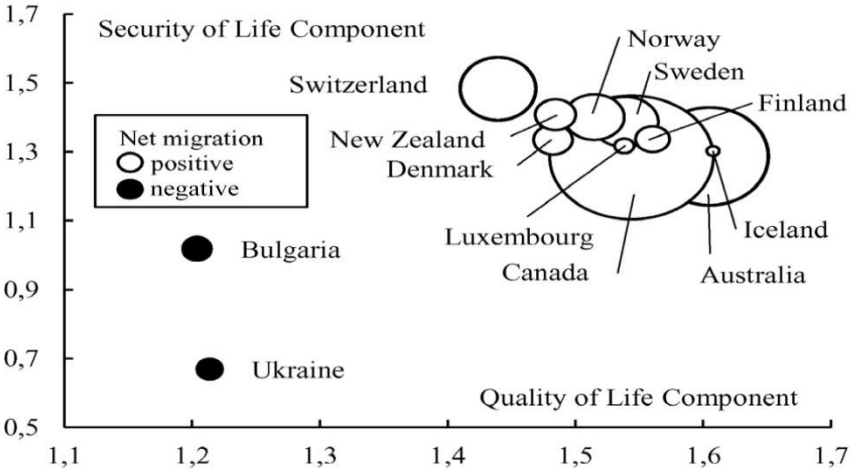

Fig. 2.6. Placement of countries in the coordinates of net migration by the ratio of the index of security of life to the index of quality of life of the country (built on the basis [16; 46; 47])

The analysis of the quality of life index gave the following result: in Ukraine this index is only 0.669, in Bulgaria 1.019. This value is 0.681 (for Ukraine) and 0.331 (for Bulgaria) less than the average value of the quality of life index (1,350) of the TOP-10 countries. Of the countries studied, significant values of this indicator were achieved in Switzerland - 1,483, New Zealand - 1,399, Norway - 1,389, Sweden - 1,377. The quality of life index is lower than the average in the following TOP-10 countries: Canada (1,286), Iceland (1,297) [16; 47].

Volumes of net migration affect such indicators as the index of sustainable development of the country and the index of its harmonization. The result of the calculations is presented graphically in Fig. 2.7. It should be noted that the degree of harmonization in the studied countries averages 0.924, in Bulgaria - 0.907, and in Ukraine - 0.721. The average value of the index of sustainable development of the studied countries is 2,881 [16; 46; 47].

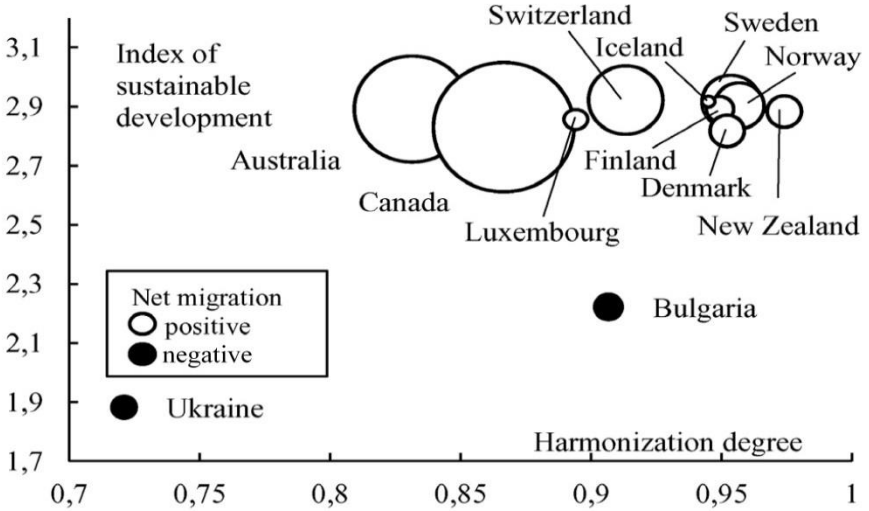

Fig. 2.7. Placement of countries in the coordinates of net migration by the ratio of the index of sustainable development of the country to the harmonization index (built on the basis [16; 46; 47])

In Ukraine, the sustainable development index is only 1,882, in Bulgaria - 2,222, which is 1.04 and 0.7 less than in Switzerland, where this figure reaches the highest level - 2,922 [16]. After Switzerland, other TOP-10 countries should be noted, such as Sweden (2,916), Iceland (2,906), and Norway (2,903), where the sustainable development index exceeds 2.9. Not significantly, but this figure is lower in countries such as: Australia (2,892), Finland (2,892), New Zealand (2,884), Luxembourg (2,852), Canada (2,830), Denmark (2,818) [16; 46].

The volume of net migration affects such important indicators of the country as its competitiveness and economic freedom. The interpretation of the volumes of net migration in accordance with the indicators of the index of economic freedom and the index of growth of competitiveness of the TOP-10 countries and Bulgaria and Ukraine is shown in Fig. 2.8.

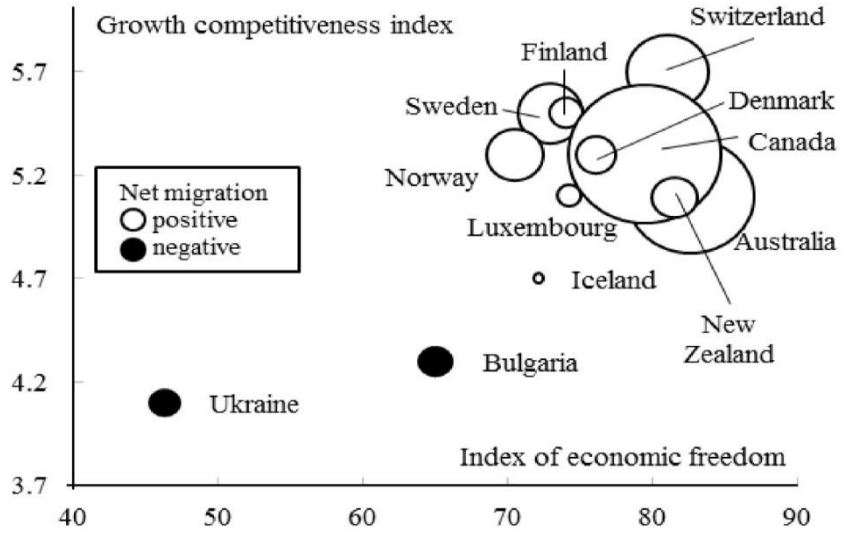

Fig. 2.8. Placement of countries in the coordinates of net migration in the ratio of the index of economic freedom to the index of growth of competitiveness (built on the basis of [16; 46; 47])

According to calculations, the average value of the competitiveness index in the top 10 countries is 5.2, and the index of economic freedom reaches 76.42. The Competitiveness Index of Ukraine (4.1) is 1.1, and in Bulgaria (4.3) 0.9 less than the average of the TOP-10 countries, where the highest in Switzerland - 5.7, Sweden - 5.5, Finland - 5.5. The lowest index in Iceland is 4.7 (this is 0.6 more than in Ukraine and 0.4 more than in Bulgaria) [16; 47].

Regarding the index of economic freedom, it should be noted that in Ukraine this figure is only 46.3, in Bulgaria - 65.0, which is 30.12 (for Ukraine) and 11.42 (for Bulgaria) less than the average of the TOP countries. 10. The highest figures for this indicator were reached in Australia: 82.6, New Zealand - 81.4, Switzerland - 81. Below the average of the index of economic freedom in Sweden (72.9) and Iceland (72.1) [16; 46].

Let's analyze the dependence of the unemployment index on the volume of net migration (Fig. 2.9).

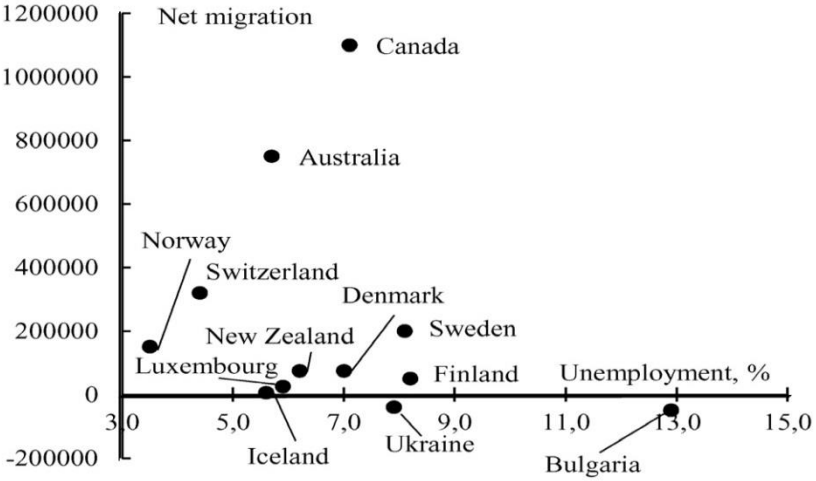

Fig. 2.9. Placement of countries in the coordinates of the volume of net migration by unemployment rate (built on the basis of [16; 46; 47])

It should be noted that in Canada migration is 1,099,999 people, which is the highest value compared to other TOP 10 countries and Bulgaria (–50,000 people) and Ukraine (–40006 people), where the indicator was negative. The average value of net migration in the studied countries reaches 275,102.7 people [16; 47]. Countries with significant net migration, after Canada, are Australia (749,997 people), Switzerland (320,000 people), Norway (149,997 people), and Sweden (200,000 people). Among the TOP-10 countries, the lowest value of this indicator is in Iceland (5429 people), which is 1,094,570 people less than in Canada [16].

Graphic interpretation of the dependence of the unemployment rate on the volume of net migration shows that the unemployment rate in Ukraine is 7.9%, which is 1.025% more than the average value of this indicator (6.875%) [46; 47].

The unemployment rate in Bulgaria reached the highest level - 12.9% compared to other surveyed TOP-10 countries and Ukraine, i.e. 6.025% more than the national average. In Finland, this figure generally reaches 8.2% and is the highest compared to other TOP-10 countries. Of the top 10 countries, the lowest unemployment index (depending on the volume of net migration) in Norway - 3.2% (4.4% lower than in Ukraine and 9.7% lower than in Bulgaria), in Switzerland - 4.2%, Luxembourg - 5.1%, in Australia - 5.2% [46; 47] .

Analyzing the volume of net labor migration in terms of human development index and quality of life index (Fig. 2.10), it should be noted that the human development index is highest in Norway (0.955), ie 0.215 more than in Ukraine (0.74), and 0.173 more than in Bulgaria (0.782) [16; 47].

In addition to Norway, it should be noted other countries in which the human development index is above average (0.913): Australia - 0.938; New Zealand (0.919); Sweden - 0.916. Of the top 10 countries, the human development index is the lowest in Luxembourg, at 0.875, which is 0.08 less than in Norway [16].

In order to improve the indicators analyzed above and ensure sustainable development of countries at the junction of K-cycles, the regulation of labor migration in the studied countries under the legal forms of employment of migrant workers (employment contract) should be carried out economically and optimize transaction costs labor force. Transaction cost optimization refers to the cost of obtaining information about the state of the labor market in the country; measuring the quality of labor and labor services; negotiating and concluding employment contracts; coordination of positions and coordination of actions of market agents of the country; compliance with labor legislation, etc. [48]. It should be noted that in the case of illegal forms of employment of migrant workers, it should be a matter of minimizing or allocating transaction costs of countries so that employment is possible and the role of the state in exercising the employee's right to protection of labor as property.

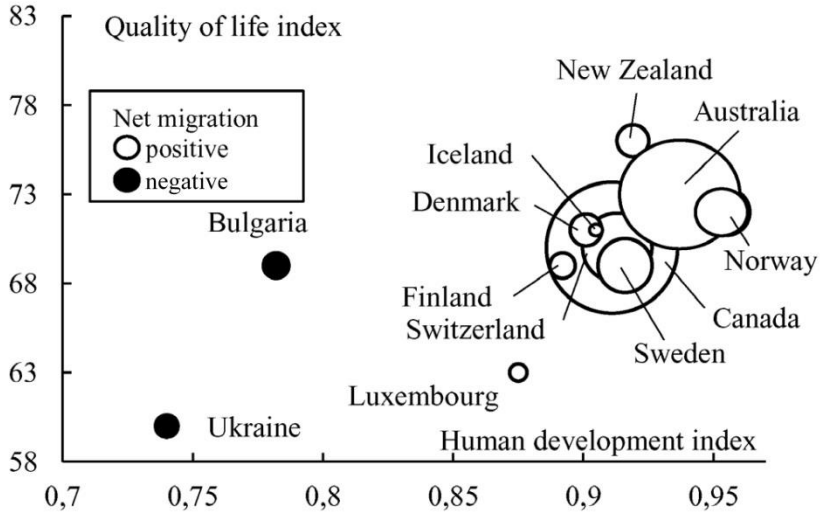

Fig. 2.10. Placement of countries in the coordinates of net migration by the ratio of the human development index to the quality of life index (built on the basis of [16; 46; 47])

Implementation of effective regulation of labor migration in ensuring the sustainability of countries at the junction of K-cycles should be based on developing an effective mechanism for regulating migration processes and immigration control, taking into account national security requirements and the needs of national economies in foreign labor [48]. Effective regulation of labor migration at the international and global levels should include the interests of states, international organizations and intergovernmental institutions, as their interaction forms a global system for regulating international migration.

In the studied countries TOP-10 and Ukraine and Bulgaria may have special interstate programs to encourage re-emigration of labor; interstate training programs for re-emigrants; interstate economic assistance programs (for example, a state with mass emigration) from other developed countries; information and financial support

programs for re-emigrants; interstate first job programs for people who have studied in other countries under special programs; the procedure for recognizing non-formal education and skills of migrant workers; programs aimed at promoting the continuing education of migrant children, etc. [49; 50].

In order to effectively regulate labor migration, the migration policy of all countries, including the surveyed ones, should include a system of legal, administrative, organizational and financial measures and information support of government agencies and public associations to regulate the migration space regulate migration from the standpoint of national priorities, quantitative and qualitative composition of migration flows, their social, demographic and economic structure [50; 51].

The reasons for labor migration are factors of both economic and non-economic nature. The reasons for the non-economic type include political, national, religious, racial, family and others. The global labor market is characterized by a constant rotation of the immigrant contingent. Assistance and employment systems are being set up to retain labor after returning to their home country [52].

At the global level, there are several regulatory institutions aimed at regulating migration processes and the functioning of the global labor market: the International Labor Organization, the International Organization for Migration, the Office of the United Nations High Commissioner for Refugees, the OECD [50; 51].

2.5. Global technology market as a form of realization of the technological resource of global economic development and international scientific and technological relations

The "new global economy" should be seen as a combination of the knowledge economy, the technology economy and the information economy, the digital economy and the development of processes in Industry 4.0. It is the knowledge economy that ensures the creation of a new intellectual product. Information is the infrastructure for its distribution in the global market and high technology is its final use in the form of demand for the product. Already new global processes must give rise to a new global economy through the introduction of advances in science and technology and innovative methods and advanced technologies in all sectors of the economy.

Ensuring the competitiveness of Ukraine's economy in the XXI century associated with the solution of a number of strategic tasks aimed at realizing competitive advantages and developing scientific, innovative, infrastructural and material-resource potential. But the solution of these problems is possible only in the case of efficient functioning of the national economy, and this requires rapid industrial development. The development of Industry 4.0 and the industrial revolution contributes to the introduction and improvement of high technology, as provided by the new economy, the knowledge economy and the development of the digital economy.

Significant dissemination and effective implementation of the results of scientific and technological activities can be achieved through international cooperation, interaction of national potentials, resources of different countries, and most importantly - the joint solution of economic development at the global level. All this can be realized thanks to scientific and technological internationalization

and the effective functioning of the global technology market, which is characterized by intensive development and a high degree of mobilization. Scientific communities of industrialized and developing countries are focused on conducting joint research. This is also facilitated by the processes of internationalization of science and technology. Accordingly, the agreements are special international programs that integrate into the process of research and implementation of inventions of universities, research centers and industrial corporations around the world.

Taking into account the international technological exchange and the needs of national economies, states must improve technologies and adapt already acquired ones that will correspond to the development of Industry 4.0 both in the countries and in the world. Effective technological exchange between countries will contribute to the full functioning and formation of the global technology market.

Consider the evolution of the main stages of its formation. By the eighteenth century (industrial revolution) the latest technologies were used in private enterprises, and the innovative products developed by them were sold on the market. The next stage (XVIII-XIX centuries) is characterized by the use and sale of new technological developments not only by their own enterprises but also by other manufacturers. Despite the fact that this period was characterized by a rather difficult financial, production situation, which developed in the markets for the sale of products from the middle of the twentieth century. the processes of international technology exchange between countries are intensifying, which has allowed to form a new form of development of international relations in the world and encouraged the formation of the world technology market as such.

The main reasons for the formation, formation and intensive development of the global technology market as one of the forms of realization of technological resources and international scientific and technological relations between the countries of the world were the following:

1) uneven development of technologies in the world is caused by insufficient number of performed research and development works and lack of sufficient funds for rapid implementation of scientific and technical developments;

2) the impossibility of purchasing modernized equipment for the production of innovative products and overcoming technological backwardness, which hindered the development of industries in almost all countries;

3) emergence of significant economic and scientific and technical problems and overcoming the barrier of limited scientific and technical base;

4) lack of resources and production capacity at the enterprise level.

Consider the subjects and objects of the global technology market. The subjects are companies, universities (especially research), individuals, the state, etc. Its objects include scientific and technological developments, the results of intellectual work in both substantive and non-substantive form. For example, equipment, tools, production facilities, production lines, units and others have a subject form. Objects of the global market in non-subject form include knowledge, experience, skills of developers, technical documentation.

The global technology market is divided into segments in the form of such markets as: the market of patents and licenses; market of knowledge-intensive and technologically intensive products; high-tech capital market; market of scientific and technical specialists [53].

The transformation of the global technology market into a global one was characterized by the main features shown in Fig. 2.11.

Consider the importance and economic feasibility of exporting and importing technologies for countries. The expediency of exports for the economic development of countries is as follows: growth of national income through the sale of technological developments; development of the country's competitive advantages due to technology transfer to international markets; export of technological products is one of the methods of solving the problems of export of a certain type of product; establishing control over a foreign firm;

providing a new technologically developed product allows access to other innovations, know-how, innovations (cross-licensing). The economic feasibility of imports is to save costs on research and development, the ability to access innovations, increase exports through the use of imported technologies and more.

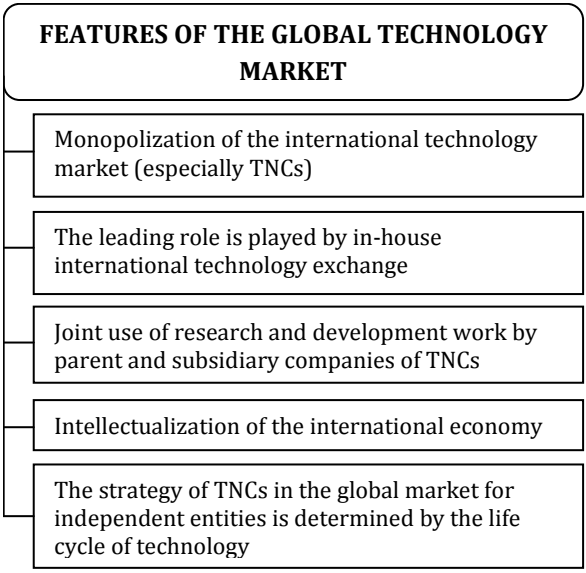

Fig. 2.11. The main features of the global technology market

Questions for self-study

1. The problem of access to the latest information sources.
2. The problem of uneven distribution of information resources in global business.
3. Global information networks as a resource for the development of the global economy.
4. The role of individual actors in the global economy.

5. Leading cities as subjects of the global economy.
6. The emergence of new forms of global social stratification (locals, technocrats, cosmopolitans, global).
7. Modern forms of manifestation of innovative work in the system of factors of knowledge economy.

Tasks for testing knowledge

1. Justify the factors of international direct investment.
2. Explain the classification of forms of labour migration, which has developed in world practice, using the research of scientists.
3. What segments can be divided into the global technology market?
4. Justify the economic feasibility of importing technology into the global market.
5. Explain the distribution of innovation in the global securities market.
6. Describe the innovations in the market of derivative financial instruments or derivatives.
7. Explain the features of the mechanism of international trade in services.
8. Name the subjects of international credit relations.
9. Justify the models of service provision according to the criteria and the need for the provider to be present in the country where the service is provided.
10. Explain the main functions of the world monetary system as a mechanism to ensure the functioning of the global foreign exchange market.

Section 3
GLOBAL CONTEXT OF UKRAINIAN ECONOMY DEVELOPMENT

- Prospects for reforming Ukraine's economy and integration into the global economic system.
- Problems of integration of Ukraine's economy into the world global economy.

3.1. Prospects for reforming Ukraine's economy and integration into the global economic system

Ukraine's integration into the European Union and the global economic system is currently a priority for the government. Issues related to the reform of the country's economy in order to effectively integrate it into the world community are quite relevant because the state must create favorable conditions for the development of new highly efficient integrated production network structures. The importance and necessity of state reform of the economy and effective regulation of economic processes is determined by the following factors:

1) in the conditions of rapid scientific and technological progress and development of Industry 4.0, the state leadership should respond quickly to strategic social needs by providing rapid targeted changes in the economic structure;

2) the transformation of the world economy into a global one has been the impetus for the interaction and interdependence of the world from the external environment through open borders, and this contributes to the benefits of leading countries and discriminates against developing countries [54].

Adjusting the structure of the underdeveloped national economy only through market development without government intervention will lead to: general structural simplification; decline of high-tech industries; strengthening the raw material orientation of industrial production; acquisition by the country of the role of the consumer of final products; transformation into a supplier of cheap raw materials and labour; specialization in the use of environmentally friendly technologies and industries [54].

The reforms in Ukraine's economy have brought about some profound qualitative changes, and among the positive economic changes, important achievements are the prospects for full integration into the global market economy. Example:

- formation of an effective competitive private sector of the economy and private enterprises;
- formation of national markets for goods, labour and capital with predominantly market pricing, able to meet effective demand;
- introduction of the national currency of the UAH;
- formation of the national financial and banking system and the regulated currency market;
- diversification and liberalization of foreign economic relations, the emergence of new channels of trade and investment cooperation.

In addition, it is necessary to continue to implement systemic transformations in various spheres of economic, social and political life in order to establish itself on the path of modern civilized development. It is also worthwhile to implement such reforms and to be deeply aware that the shortcomings and negative features of the transformation are temporary.

One of the main priorities should be to deepen the democratization of all spheres of public life, as this is the basis of

social and economic progress of society. Strengthening economic democracy in society contributes to the realization of corporate rights of citizens and the development of small and medium enterprises and the introduction of a civilized system of distribution among social groups. Ukraine's participation in international integration processes is characterized by insufficient readiness of the country for highly effective forms of foreign economic cooperation. Comprehensive economic reforms aimed at Ukraine's integration into the world economy must be implemented. The economic policy of the state should be aimed at integrating the national economy into the global world economy and be based on the creation of scarce factors of production with the support of existing.

The effectiveness of Ukraine's entry into the global economic system makes it necessary to train specialists of new quality who are able to consistently defend the interests of the Ukrainian economy and the state in the global economy and the globalization world. Ukraine is intensively trying to integrate into the European and world community. Ukraine's path to Europe and the global economic system is not easy, but it is promising. Therefore, it is necessary to realize the potential of Ukrainian science and high technology; to restore and expand prospects from the available production capacity, employment of the able-bodied population; provide new conditions and opportunities for the formation of more favorable economic relations with other countries. Accordingly, new sources of public investment in structural change and industrial development will be created, including Industry 4.0. Ukraine is trying to overcome the technological gap with Western Europe, so there is an opportunity to quantify exports.

Ukraine needs to integrate into the world economy and take a worthy place in the world community. This process can be investigated quantitatively by calculating the export quality ratio (EQR) (table 3.1), which shows the ratio of exports of finished products of final demand for industrial and consumer purposes and high-tech component to the volume of exports of raw materials, semi-

finished products, intermediate goods and unprocessed agricultural products.

The export quality ratio is determined as follows [20]:

$$EQR = E_{fp} / E_{rm} \quad (3.1)$$

where

E_{fp} – volumes of exports of finished products of final demand for both production and consumer purposes and high-tech components (the cost of goods with a high degree of processing - technological component);

E_{rm} – volumes of exports of raw materials, semi-finished products, intermediate goods and unprocessed agricultural products (cost of raw materials and semi-finished products - resource component).

The numerator of the fraction in formula (3.1) is related to the technological component of competitiveness and the denominator to the resource component.

Table 3.1.

Quantitative characteristics of the quality of exports of some highly developed countries and neighbouring countries with Ukraine during 2000-2015

COUNTRY	YEARS				*EQR*, average value
	2000	2005	2010	2015	
Japan	3,82	3,01	2,34	2,4	2,89
China	2,3	2,76	2,92	2,64	2,66
Hungary	2,44	2,53	2,54	2,42	2,48
Germany	1,94	1,98	1,85	2,01	1,95
Slovakia	1,2	1,37	1,96	2,54	1,77
USA	2,08	1,68	1,08	1,11	1,49
France	1,59	1,56	1,5	1,61	1,57
Romania	1,35	1,28	1,6	1,75	1,5
Poland	1,25	1,28	1,41	1,39	1,33
Belarus	0,63	0,38	0,36	0,25	0,41
Ukraine	***0,26***	***0,22***	***0,29***	***0,21***	***0,25***
EU countries	1,77	1,71	1,53	1,51	1,63

Source: calculated from data [55].

This ratio indicates how the country is using its technological potential. If the coefficient is less than one, the country hardly uses its own technological potential. If larger than one, then in world trade the country relies mainly on its technological potential. It should be noted that the ratio is directly related to the sectoral structure of industry and the ratio of new and traditional sectors of the economy.

Indicators of Ukraine's foreign trade in goods and services for the period from 2016 to 2018 are given in table. 3.2.

Table 3.2

Ukraine's foreign trade in goods and services from 2016 to 2018.

	Export *			Import*		
	2016	**2017**	**2018**	**2016**	**2017**	**2018**
Total (goods and services)	45112,7	52579,5	57280,9	44571,1	55080,6	63493,7
CIS countries	9752,4	10674,2	10720,8	9237,1	12128,3	13897,6
Other countries	35360,3	41905,3	46560,1	35334,0	42952,3	49596,1
of which EU countries (28)	15827,5	20157,6	23100,1	19558,7	23330,2	26570,1

* In the million US dollars

Source: systematized by data [47].

3.2. Problems of integration of Ukraine's economy into the world global economy

Despite the significant potential for Ukraine's integration into the world economy, the effectiveness of its integration is not high enough because there are certain reasons.

Falling production and rising unemployment, which are a consequence of the crisis of 2007-2012, as evidenced by the zero rate

of economic development of Ukraine in 2013-2014 and the projected (according to IMF estimates) decline in GDP to 6.5%. More than 58% of the products are in the lowest 3rd technological mode [56], which includes products of industrial technology, building materials, ferrous metallurgy, shipbuilding, metalworking, light, woodworking, pulp and paper industry and more. Production output in the 5th and 6th rounds covers about 4%. It should be noted that the 6th technological structure in the country is almost absent (less than 0.1%) [57]. If we take into account the indicators of financing scientific and technical developments, the situation is as follows: 70% of the funds go to the 4th way, and only 23% to the 5th. Innovation costs are 60% for the 4th technological mode and 30% goes to the 3rd technological mode, and only 8.6% to the 5th. Capital investment in technological re-equipment and modernization is 83% in the 3rd mode, and only 10% is in the 4th mode [56].

Analysing the indicators of the countries of world leaders in technological progress, it can be argued that in these countries the development of the 6th technological system prevails. Since funds are invested in biotechnology (in particular in cell biology); aerospace industry; nanotechnology; new materials; optoelectronics; Artificial Intelligence; microelectronics; photonics; mechanics of microsystems.

Leading countries continue to develop industries of the 5th technological system, such as the pharmaceutical industry, chemical, tool industry, automotive and others. It is worth noting that in recent years and even decades, the priorities chosen by the country's leadership don't fully correspond to global development prospects.

1. Low quality and high energy consumption and cost of products produced by domestic enterprises, even at low labour costs. Accordingly, Ukraine has a low level of competitiveness, but still joined the World Trade Organization.

2. Imperfection of the management system of foreign economic relations and integration processes. This is especially noticeable in the case of the events surrounding Ukraine's signing of the Association Agreement with the European Union [57] and the need to comply with all its requirements.

The effectiveness of strategic decisions of the government of any state, such as its political component, affects economic and integration development in the world. The work of foreign scientists is devoted to these issues [58; 59; 60; 61]. An important source in the development of Ukraine's economy and solving the country's integration into the world community should be the attraction of foreign direct investment in the following areas: agricultural machinery (increasing sales of locally produced equipment); pharmaceutical and medical industry, medical equipment; building materials industry (due to the development of individual construction); electricity, namely the privatization of energy generating companies (a significant share of foreign investment will be directed to upgrading the equipment of thermal and hydropower plants); oil and gas industry (it is planned to update the assets of all refineries). The Law of Ukraine "On Production Sharing Agreements" [62] in the country is based on the formation of conditions for attracting investments aimed at oil and gas production and development of the agricultural sector.

In addition to the problems of integration of Ukraine's economy into the global economy, Ukraine also has achievements aimed at integration into the global market economy. In Ukraine, national markets for goods, labour, including the capital market with market pricing, which is able to meet the solvency of demand in the markets; an effective competitive private sector of the economy is formed and private enterprises emerge and develop; the national currency, the hryvnia, was introduced; the formation of the national financial and banking system in general and the regulation of the foreign exchange market in particular; diversification and liberalization of the country's foreign economic relations are intensifying and international relations in trade and investment cooperation are expanding, etc.

The processes of globalization development and global transformational transformations in the world contribute to the full transition and transformation of the world economy into a globalized world economy, and Ukraine is one of the participants in these transformation processes. Such transformations concern both branch,

and regional section. But it should be noted that the formation of the global economy is objectively conditioned by the desire of the peoples of the world to survive and develop by building the military potential that Ukraine needs. The countries of the world must unite their efforts and cooperate in order to launch a new scientific and technological revolution and develop artificial intelligence to use all the achievements of science and technology. Accordingly, Ukraine must work towards the development of Industry 4.0 and make full use of the 5th and 6th technological modes. The internationalization of economic life and the division of labour must become key in the development of production processes in the world.

Questions for self-study

1. The role of international non-governmental organizations and clubs in determining the priority areas of global economic policy.
2. The latest services in the global economy.
3. Global imperatives of corporate strategies for expanding international business.
4. The scale, dynamics and geographical dimension of consolidation strategies in global business.
5. The role of individual actors in the global economy.
6. Least developed countries as an object, not a subject of the global economy.

Tasks for testing knowledge

1. Name the prospects for reforming Ukraine's economy.
2. Explain the need for Ukraine's integration into the global economic system.
3. Name the problems of integration of Ukraine's economy into the world economy.
4. Justify the importance of attracting foreign direct investment for the effective integration of Ukraine into the world community.

5. Explain the effectiveness of the government's reforms in Ukraine's economy.
6. Describe the need to adjust the structure of the underdeveloped national economy in the global economy.
7. Explain how the structure of the national economy of any country in the world will change without government intervention, if the adjustment occurs exclusively through market processes and under the influence of global transformations.
8. Explain the importance of developing the country's foreign trade for its effective integration into the global economic system.

Literature

1. Analysis of sustainable development - global and regional contexts: a monograph / International Council for Science (ICSU) [and other]; Performers: A.A. Boldak, S.V. Voitko, O.A. Gavrish, I.M. Dzhigirei and others: Scientific supervisor M.Z. Zgurovsky. Kyiv: NTUU "KPI", Ukraine in indicators of sustainable development. 2010. Part 2. 220 p.
2. Analysis of sustainable development - global and regional contexts: a monograph / International. Science Council (ICSU) [etc.]; Performers: A.A. Boldak, S.V. Voitko, O.A. Gavrish, I.M. Dzhigirei and others: Scientific supervisor M.Z. Zgurovsky. Kyiv: NTUU "KPI", Global analysis of quality and safety of human life. 2010. Part 1. 255 p.
3. Analysis of sustainable development - global and regional contexts: monograph / International. Science Council (ICSU) [etc.]; Performers: A.A. Boldak, S.V. Voitko, O.A. Gavrish, I.M. Dzhigirei and others: Scientific supervisor M.Z. Zgurovsky. Kyiv: NTUU "KPI", Ukraine in indicators of sustainable development (2011–2012). 2012. Part 2. 232 p.
4. Analysis of sustainable development: global and regional contexts: monograph / O.A. Akimova, A.O. Boldak, P.K. Vavulin, S.V. Voitko, O.A. Gavrish and others. // International Council for Science (ICSU), etc.; scientific supervisor M.Z. Zgurovsky. Kyiv: NTUU "KPI", Ukraine in indicators of sustainable development. 2013. Part 2. 172 p.
5. Security and competitiveness of Ukraine's economy in the context of globalization: a monograph [O.S. Vlasyuk, A.I. Mokiy, O.I. Ilyash, V.I. Voloshin, M.I. Fleichuk, T.O. Vlasyuk and others] / In the general edition O.S. Vlasyuk. Kyiv: NISS, 2017. 384 p.
6. Voitko S.V. Management of development of knowledge-intensive industries: a monograph / S.V. Voitko. Kyiv: "Polytechnic", 2012. 280 p.

7. Gerasymchuk V.G. In search of a successful model of economic development // Strategic Management of National Economic Development: a monograph. In 2 volume/ In the general edition O. V. Kendyukhov. Donetsk: DonNTU, 2013. Vol. 1. P. 85–96.
8. Belarus O.G. Global strategies of the European Union: monograph / O.G. Belarus, Yu. M. Matseyko, I.I. Wind // State Higher Educational Institution "Kyiv National Economic University named after Vadym Hetman"; Institute of World Economy and International Relations of the National Academy of Sciences of Ukraine; International Institute of Global Studies. Kyiv: KNEU, 2009. 528 p.
9. Global economy of the XXI century: human dimension: monograph / D.G. Lukyanenko, A.M. Lieutenant, A.M. Kolot; edited by prof. D.G. Lukyanenko, prof. A.M. Lieutenant. Kyiv: KNEU, 2008. 420 p.
10. Global economy: textbook / N.M. Vdovenko, L.V. Bogach, V.L. Geraymovich, K.S. Kvasha, M.M. Pavlenko. Kyiv: NULES of Ukraine, 2017. 319 p.
11. Global economy: textbook [In 2 parts. Part 1] Theoretical principles of global research / V.V. Lipov. Kharkiv: KhNEU named after S. Kuznets, 2017. 228 p.
12. Official site of the United Nations [Electronic resource]. URL: http://https://www.un.org (Date of application: May 15, 2022).
13. Word and deed: analytical portal [Electronic resource]. URL: https://www.slovoidilo.ua (Date of application: May 17, 2022).
14. Economic problems of the XXI century: international and economic dimensions / edited by S.I. Yuri, E.V. Saveliev. Kyiv: Knowledge, 2007. 595 p.
15. Global trends and prospects: the world economy and Ukraine // Ukrainian Center for Economic and Political Studies named after Alexander Razumkov; scientific editor V. Yurchyshyn. Kyiv: Testament, 2018. 202 p.
16. Official site of the World Bank / The World Bank. Data & Research [Electronic resource]. URL: http://data.worldbank.org.

17. Official site of the International Federation of Robotics [Electronic resource]. URL: https://ifr.org/worldrobotics.
18. The International Federation of Robotics presented a list of the most robotic countries in the world [Electronic resource] // Delo magazine. URL: https://delo.ua/lifestyle/mezhdunarodnaja-federacija-robototehniki-predstavila-spisok-samy-342192.
19. Global economy: a textbook / V.P. Reshetylo. Kharkiv: KhNUMG named after O.M. Beketova, 2018. 167 p.
20. Kutsyk P.O. Global economy: principles of formation, functioning, regulation and development: a monograph / P.O. Kutsyk, O.I. Kovtun, G.I. Bashnyanin. Lviv: LKA Publishing House, 2015. 594 p.
21. Kovtun O.I. Global economy: textbook / O.I. Kovtun, P.O. Kutsyk, G.I. Bashnyanin; edited by O.I. Kovtun. Lviv: LKA Publishing House, 2014. 704 p.
22. Political geography of the world: textbook [2nd edition revised and supplemented] / S.V. Trokhimchuk, O.V. Fedun. Kyiv, 2007. 442 p.
23. Kalchenko T.V. Global economy: textbook / T.V. Kalchenko. Kyiv: KNEU, 2009. 364 p.
24. Kuzmin OE Global economy: textbook / O.E. Kuzmin, O.V. Pie, I.V. Lytvyn. Lviv: Lviv Polytechnic, 2016. 300 p.
25. Lukashevich V.M. Globalism: textbook / V.M. Lukashevich. Lviv: New World-2000, 2005. 440 p.
26. Lukyanenko D.G. Global economic integration: monograph / D.G. Lukyanenko. Kyiv: National Textbook, 2008. 220 p.
27. International regionalism of the global economy // Economic problems of the XXI century: international and Ukrainian dimensions: monograph / edited by S.I. Yuri, E.V. Saveliev. Kyiv: Knowledge, 2007. P. 121–140.
28. Ukraine's independence in a globalized world: vectors XXI Century: Proceedings of the Scientific Conference (August 22, 2011, Kyiv) / edited by Ya. A. Zhalilo, S.O. Yanishevsky. Kyiv: NISD, 2011. 192 p.

29. Orekhova T.V. Transnationalization of economic systems in the context of globalization: a monograph / edited by Yu. V. Makogon. Donetsk: DNU, 2007. 394 p.
30. Orekhova T.V. Transformation of the process of transnationalization in terms of growing uncertainty of the global economic environment: a monograph / T.V. Orekhova, Yu. V. Makogon, K.V. Lysenko, M.O. Chernousova and others. - Donetsk: DonNU, 2011. 652 p.
31. Official site of the World Trade Organization [Electronic resource]. URL : https://www.wto.org.
32. Rokocha V.V. Global economy: paradigms and paradoxes of development: a monograph / V.V. Rokocha, B.M. Obyagailo, V.I. Terekhov. Kyiv: University "University of Economics and Law" KROK ", 2017. 314 p.
33. Sachs J. Macroeconomics: a global approach / J. Sachs, F. V. Larren [translated from English]. M.: Delo, 1996. 848 p.
34. Sidenko V. R. Globalization - European integration - economic development: Ukrainian model / V. R. Sidenko. Kyiv: Phoenix, 2011. Vol 2. 448 p.
35. Sokolenko S. I. Globalization and economy of Ukraine: textbook / S. I. Sokolenko. Kiev: Logos, 2009. 568 p.
36. Common European economic space: harmonization of megaregional: monograph / edited by D.G. Lukyanenko, V.I. Chuzhikov. Kyiv: KNEU, 2007. 544 p.
37. Stolyarchuk Ya. M. Global asymmetries of economic development: monograph / Ya. M. Stolyarchuk. Kyiv: KNEU, 2009. 302 p.
38. Strategies of economic development in the context of globalization: a monograph / edited by Dr. Econ. Sciences, Prof. D.G. Lukyanenko. Kyiv: KNEU. 2001. 583 p.
39. Modern economic theories of global systems: a textbook / G.I. Bashnyanin, B.M. Shevchik, O.O. Dry, O.O. Perepelkina. Lviv: New World - 2000, 2013. 322 p.

40. Filipenko A.S. Global forms of economic development: history and essence: monograph / A.S. Filipenko. Kyiv: Knowledge, 2007. 670 p.
41. Financial and economic development of Ukraine in the context of globalization: a monograph / edited by J.V. Belinskaya. Kyiv: National Academy of Management, 2008. 212 p.
42. Ukraine and the International Monetary Fund / edited by A.V. Shapovalov, O.E. Yeremenko; editorial board V.S. Stelmakh and others. Lviv: LBINVU, 2005. 206 p.
43. Held D. Global transformations: Politics, economics and culture / D. Held. Stanford (Calif.): Stanford University Press, 2002. 515 p.
44. Official site of the International Organization for Migration [Electronic resource]. URL: http://iom.org.ua.
45. Hrinko I.N. International migration of labour resources of Ukraine and Bulgaria: the impact on sustainable economic development of states // Economic Journal – XXI, 2016. № 160 (7–8). P. 27–30.
46. Database of the World Data Center for Geoinformatics and Sustainable Development [Electronic resource]. URL: http://wdc.org.ua/uk/data.
47. Official site of the State Statistics Service of Ukraine [Electronic resource]. URL: http: www.ukrstat.gov.ua.
48. Hrinko I., Voitko S. Ensuring the sustainable of countries development at the intersection of K-waves through the regulation of the labour migration // Knowledge Society: KSI transactions on Knowledge Society (March 2015). Sofia, 2015. Vol. VIII. No. 1. P. 49–52.
49. Hrinko I., Voitko S. Comparative analysis of countries in the peer-group based on economic potential and components of sustainable development // Centre for European Studies Working Papers, 2017. Vol. IX. Issue 3. P. 358–376.
50. Hrinko I.N., Abramova M.M. Peculiarities of migration between Ukraine and European countries and methods of its regulation [Electronic resource] // Economic Bulletin of the KPI. 2018. No. 18. URL: http://ev.fmm.kpi.ua.

51. Hrinko I.N., Lutsenko N.I. Regulation of emigration processes of Ukraine: the impact of globalization factors [Electronic resource] // Economic Bulletin of the KPI. 2018. No. 18. URL: http://ev.fmm.kpi.ua.
52. Hrinko I.N. Migration of labor resources of the TOP-10 countries in the development of globalization processes // 5-th International Conference "Law, Economy and Management in Modern Ambience", University "Union – Nikola Tesla" (20–22 April 2017). Belgrad, Serbia, 2017. P. 353–359.
53. Hrinko I. M., Nechiporuk I. V. Analysis of indications of the destruction of the world's leading lands and the increase in the race for the destruction of the world as a global problem [Electronic resource] // Skhidna Evropa: economy, business and management. Dnipro: DVNZ "Pridniprovska Derzhavna Academy of Life and Architecture". 2018. No. 3 (14). Pp. 287–293. URL: http://www.easterneurope-ebm.in.ua/journal/14_2018/51.pdf.
54. Hrinko I. M., Kiva A. A., Kislyakov S. S. Problems of the formation of the world of light and its impact on the global economy // Scientific outlook: economics and management. Bulletin of the Dnipropetrovsk State Financial Academy of Economic Sciences. - Dnipro: "Helvetika", 2018. No. 1 (59). Pp. 28–35.
55. Database of international trade statistics [Electronic resource]. URL: www.comtrade.un.org.
56. Official website of the International Monetary Fund (International Monetary Fund) [Electronic resource]. URL: http://www.imf.org/external/index.htm.
57. Satisfaction Association between Ukraine and EU member states URL: https://www.kmu.gov.ua/diyalnist/yevropejska-integraciya/ugoda-pro-asociacyu.
58. Markoff J. Waves of Democracy: Social Movements and Political Change. London: Sage Publications Ltd., 1996. 192 p.
59. Rosenau J. Turbulens in World Politics: A Theory of Change and Continuity / J. Rosenau. – Princeton : Princeton University Press, 1990. 504 p.

60. Waters M. Globalization / M. Waters. – London : Routledge, 1995. 185 p.
61. World Trade Report 2011. The WTO and preferential trade agreements: from co-existence to coherence. – Geneva : WTO Publications, 2011. 251 p.
62. On production sharing agreements: Law of Ukraine [Electronic resource] // Verkhovna Rada of Ukraine. URL: https://zakon.rada.gov.ua/laws/show/1039-14.

Appendix A

TASKS AND EXAMPLES OF SOLUTION

TASK 1

Demand and supply of labour in the labour market of country X is described by the following equations (million people): D = -0,4w + 28; S = 1,1w - 1,8.

EXAMPLE

Demand and supply of labour in the labour market of country X is described by the following equations (million people): D = -2w + 40, S = 3w - 20.

From country X emigrated in search of better work 1 million workers. Calculate the level of wages in X after emigration of workers from the country.

The solution:

1) S = 3w - 20 - 1 = 3w - 21

2) S = D, -2w + 40 = 3w - 21, w = 12.2

Answer: 12.2 conventional units.

TASK 2

Demand and supply for laptops in the country are characterized by the equations: D = -3p + 1000, S = 2p + 100. Calculate the volume of imports at a world price of 150 conventional units in the global market and an import duty of 10%.

EXAMPLE

Demand and supply for monitors in country D are characterized by equations (thousands):

D = -5p + 1200, S = 4p + 300. Calculate the volume of imports at a world price of 70 gr. from and import duty 12%

The solution:

1) Cm = 70x1.12 = 78.4 monetary units

2) D = -5x78.4 + 1200 = 808 thousand pieces.

3) S = 4x78.4 + 300 = 613.6 thousand pieces.

4) I = 808 - 613.6 = 194.4 thousand pieces.

Answer: 194.4 thousand pieces.

TASK 3

Demand and supply for goods T in countries A and B are determined by equations. Country A: $D_1 = -4.7p + 920$; $S_1 = 16p + 420$. Country B: $D_2 = -3.9p + 420$; $S_2 = 10p + 120$. Based on the calculation of the equilibrium price in both countries, determine the exporting country in the global commodity market.

EXAMPLE. Demand and supply for goods T in countries A and B are determined by equations:

Country	Demand	Proposal
A	D1 = -3,5p + 850	S1 = 20p + 350
Б	D2 = -4,5p + 520	S2 = 10p + 140

Based on the calculation of the equilibrium price in both countries, determine the exporting country

The solution:

1) A: D1 = S1, -3.5p + 850 = 20p + 350, p = 21.28 monetary units
2) B: D2 = S2, -4.5p + 520 = 10p + 140, p = 26.21 monetary units
3) The price in country A is less than B.

Answer: Country A.

TASK 4

Calculate budget revenues in Country B if possible in international trade with Country A in the global economic space. In Country B, output is 185 at a price of 12 USD, 5 units are imported. The duty rate is 20%.

EXAMPLE. Calculate budget revenues in Country B if possible in international trade with Country A in the global economic space. In Country B, output is 192 at a price of 15 USD, 8 units are imported. The duty rate is 10%.

The solution:

Consumer costs and budget revenues:

Thus, country A imports 8 units at a price of 15 USD 8 * 15 = 120 USD

Duty 10% 120 * 0.1 = 12 USD 120 + 12 = 132 consumer costs for imports

Total consumer costs: 192 * 15 + 132 = 2880 + 132 = 3012 USD

Answer: 3012 USD

Appendix B

TASKS OF MODULAR CONTROL WORK

1. The term "globalization" is first recorded in the English dictionary in:
   a. 1943;
   b. 1971;
   c. 1961;
   d. 1910.

2. Scientist urged to understand the historical process of strengthening the globalization of social relations and give him an explanation:
   a. E. Giddens;
   b. I. Wallerstein;
   c. R. Robertson;
   d. J. McLean.

3. Among the founders of the theory of globalization stand out economist:
   a. T. Levitt;
   b. J. Attali;
   c. J. Soros;
   d. K. Popper.

4. The main process of globalization is:
   a. internationalization;
   b. international economic integration;
   c. international economy;
   d. all of the above.

5. The global economy is…
   a. regular, consistent changes, development of the world system, transition from internationalization to globalization;
   b. modern, independent branch of science about the general, planetary problems of the present and future development of human civilization and globalization, its political, economic and social organization as a whole;
   c. historical social process, the content of which is the growing interconnectedness and interdependence of national economies;
   d. all of the above.

6. The essence of the integration process is:
   a. the process of intensifying the involvement of companies in international operations (transnationalization) and the expansion and deepening of world economic ties by increasing the level of mobility of factors of production (integration);
   b. the process of economic cooperation of the countries, which leads to the convergence of their production and commercial mechanisms, which takes the form of interstate agreements and is regulated jointly by the interstate bodies of the integrating countries;
   c. convergence and intertwining of national economies of several countries in order to build a single production and commercial mechanism;
   d. all of the above.

7. Legislative, sequential changes, development of the world system, transition from internationalization to globalization are:
   a. global problems;
   b. global processes;
   c. global science;
   d. the global environment.

8. The global problems of humanity are called problems such as:
   a. apply to all countries, peoples and social strata;
   b. lead to significant economic and social losses;
   c. require co-operation on a global scale, by the common actions of governments and peoples in order to solve them;
   d. all of the above.

9. The processes of intensifying the involvement of companies in international operations and the expansion and deepening of global economic relations by increasing the level of mobility of factors of production are:
   a. integration;
   b. internationalization;
   c. transnationalization;
   d. globalization.

10. The modern, independent branch of science about the general, planetary problems of the present and future development of human civilization and globalization, its political, economic and social organization as a whole:

a. global science;
b. global economy;
c. transnationalization;
d. sustainable development.

11. Social policy based on the principle of "solidarity" in social protection, also the principle of "social citizenship" is set in the model of development of the global economy:

a. American;
b. Japanese;
c. Swedish;
d. Western European.

12. Is the global index a dimensionless value?

a. yes, and explain why?
b. no, and explain why?

13. Increasing the openness of the economy, its integration into the world economic system:

a. Individual companies level of globalization;
b. Sectoral level of globalization;
c. World level of globalization;
d. Country level of globalization.

14. The model is characterized by the predominance of private (mostly joint-stock) ownership over the state:

a. American;
b. Japanese;
c. Swedish;
d. German.

15. Overarching process of transforming the world community into an open holistic system of information, technological, financial, economic, socio-political, socio-cultural interconnections and interdependencies:

a. global processes;

b. globalization;
c. internationalization;
d. transnationalization.

16. Process of economic interaction between countries, which leads to the convergence of their production and commercial mechanisms, which takes the form of interstate agreements and is regulated jointly by the interstate bodies of the integrating countries:
    a. global processes;
    b. internationalization processes;
    c. economic integration;
    d. transnationalization;

17. Important in the model is to ensure the efficiency of economic activity and the socially just monetary system, and especially its components such as social security, social justice and social progress:
    a. American;
    b. Japanese;
    c. German;
    d. Swedish.

18. Strengthening economic interdependence of countries and regions, intertwining their economic complexes and economic systems:
    a. World level of globalization;
    b. Country level of globalization;
    c. Sectoral level of globalization;
    d. Individual companies level of globalization.

19. List the global economic space indices highlighted by the International Economic Forum.

20. Justify the advantages and disadvantages of global economic development processes.