PITIRIM SOROKIN – NIKOLAI KONDRATIEFF INTERNATIONAL INSTITUTE

OPEN UNIVERSITY OF THE DIALOGUE OF CIVILIZATIONS

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THE POLITICAL ECONOMY OF CIVILIZATIONS

Textbook

Moscow - SKII - 2016

Yuri V. Yakovets. The Political Economy of Civilizations: A textbook for the system of supplementary vocational education // Yakovets Yu.V. – Moscow: SKII, 2016. – 129 p.

ISBN 978–5–282–03000–0.

The world is shaking under the blows of the global crisis unprecedented by its depth and duration. Its foundation is the decline and decay of the industrial civilization of the market-capitalist economic system. However, the essence of ways out of the crisis is still a sealed book, not only to government officials and politicians, but also for the majority of scientists and university professors.

The textbook of founder and head of the Russian civilizational school, the President of the Pitirim Sorokin - Nikolai Kondratieff International Institute of Yuri V. Yakovets sheds new light on these complex global transformations continuing the tradition of Russian thinkers – Andrej Storch and Mikhail Tugan-Baranovsky, Nikolai Kondratieff, Pitirim Sorokin and Leonid Abalkin. The author proposes a new version of the revived political economy.

The subject of political economy is proposed to include not only the relations of market-capitalist economy, but also the non-market sector (elements of civilizations): public health, education, culture, ecology, internal and external security (public administration). It states the regularities of cyclically-genetic dynamics of the economy on the basis of a unified theory of cycles, crises and innovations. It introduces the notion of the economic system of civilizations, transforming with a change of historical epochs. It researches into the development stages of the market-capitalist economy - from manufactory to the modern virtual-parasitic capitalism. It reveals the transformations of the economic system in close connection with the transformational changes of other components making the genotype of civilization (socio-demographic, natural-ecological, technological, socio-cultural and state-political). It determines the main outlines of socially, ecologically and innovatively -oriented integral economic system, the foundations of which are already taking shape in the vanguard countries. It will become prevalent in the world in the middle of the 21st century. Such is the optimistic conclusion of the textbook author.

The textbook, reflecting the establishment of a new paradigm of social sciences and the leading role of Russia in this process will be useful not only for teaching staff and students of economic universities and faculties, but also for national and international officials, political and public persons, businessmen and leaders of the new generation.

ISBN 978–5–282–03000–0

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FOREWORD

The world around us is infinitely diverse and changeable. It is continuously changing around us natural-ecological environmental changes occur in society, in the system of economic and political relations. Man himself is changing.

Changes happen all the time and do not break usual way of life. But periodically - once a decade, in half a century, in several centuries - there is a qualitative leap that changes the world and ideas of it. Usual stereotypes and the pace of life break. This requires understanding and adapting to the changing world.

Such a leap is taking shape in the first half of the 21st century. All the basics are changing: relations of nature and society, ecological environment. Available natural resources, development of which was a factor of economic growth, are being depleted. Environmental pollution has reached critical levels and has become one of the factors of adverse climate change. An increasing number of natural and man-made disasters, life on the planet become unstable. The principle of the noosphere substantiated by V.I. Vernadsky and the principle of harmonious co-evolution of society and nature substantiated N.N. Moiseev do not find worthy reflection in the global, regional and national strategies and policy.

Society is changing. It begins geo-civilizational crisis, it overlapped the crisis phases of the 200-hundred year industrial world civilization, the 500-hundred fourth generation of local civilizations, the 1000 thousand year second historical super cycle in the dynamics of global civilization. The contours of future civilizational cycles are weakly discernible. Global and national leaders broke away from science, have not understood the essence of ongoing crisis and ways out of them, and going through options of unsuccessful anti-crisis programs.

Man himself changes. Falling population growth, growing depopulation, it receives support unnatural one-sex marriage. It changes the mechanism of perception of the world: it is taking shape the third signaling system, there is a dive of a part of the new generation into the virtual world, weakens the moral basis in the new generation, it grow strong manipulating the human consciousness with the help of information technologies. It puts forward the idea of the end of the species Homo Sapiens, its devolution into a cyborg, mechano-human.

Humanity faces the problem of strategic choice: to slide into the abyss, to the degeneration and death of civilization, or consciously, goal-oriented, by scientifically-validated methods to build an integral, humanistically noospheric civilization. Both scenarios are real, and the choice between them will have to be made by the leaders of the generation of the 2020s, to whom passes the responsibility for the adoption and implementation of strategic decisions that determine the fate of civilization. Whether they succeed in their mission – is yet unclear.

The ongoing radical transformations cannot but affect the economy, the economic component of the genotype of civilization. It is clearly taking shape growing disturbing trends. It is rapidly growing a "cancerous tumor", "bubble economy" draining resources from out of reproduction and accumulation for speculative games on the capital markets. It increases the gap between rich and poor civilizations, countries, social strata, and generations. Polarization of wealth has reached the utmost limits: 1% of the population has accumulated more than the other 99%. It is used predatory used depletes natural resources, increasing pollution of the environment: for two decades greenhouse gas emissions have increased by 1.5 times. Stock

exchange "dance" of prices has turned economy into "the kingdom of crooked mirrors."

However, all is not that hopeless. It is emerging a new geo-civilizational divide, rising civilizations and leading countries form the basis for a new integral economic system. At the same time in the vanguard countries, mainly in China, it is being laid the cornerstones of the new integral economic system - socially, noospherically, and innovation-oriented. BRICS, SCO, EAEU are aimed at the establishment of a new system. It emerges a clear alternative: a new, integral economic system and a multi-polar world order, the forces of progress are outweighing in the implementation of the scientific and technological revolution of the 21st century. This process is irreversible, and in the next two decades, the prevalence of a new economic system will be generally recognized reality, no matter how long the supporters and followers of the industrial economic system leaving the historical stage would try to stop or slow down this process.

The ongoing radical transformations in nature, society and man feed the new scientific revolution, the paradigm formation that is adequate to the realities of the 21st century. At the same time the life sciences, sciences about society, and man takes the leading position in this paradigm. This fully applies to economic science.

The now prevailing paradigm of the economic science is laid in the 18-19th centuries, during the period of formation and development of the industrial civilization under the dominance of a market-capitalist economy and the leadership of the West. This paradigm is described in the book "The Wealth of Nations" by Adam Smith (1776) and "On the Principles of Political Economy and Taxation" of David Ricardo (1817). In the book "Capital" by Karl Marx it is revealed the essence and the contradiction of capitalist reproduction and proved the inevitability of its replacement by more efficient and equitable system. Subsequent economic schools, in all their diversity, have developed in line with this paradigm.

But in parallel it emerged and developed another flow of economic thought, which may be called the political economy of civilizations, giving priority to a non-market sector of economy in the sphere of spiritual reproduction, internal benefits or elements of civilization. The start to this trend was given by publication of the "Course of Political Economy" by Andrej Storch in 1815. These ideas were developed by V.I. Vernadsky, M.I. Tugan-Baranovsky, P.A. Sorokin, N.D. Kondratieff, then by L.I. Abalkin and modern civilizational school.

Now it is the time of revival of political economy as the top of the theoretical foundation of the pyramid of economic sciences. The main ideas contained in the report of Yu.V. Yakovets at the 35th Interdisciplinary Discussion on 28 December 2015 "The Political Economy of Civilization: Historical Roots and Prospects" and finds its detailed presentation the first time in this textbook. The book offered for a reader is not an academic work on political economy, but a textbook designed for leaders of a new generation, for main and supplemental education at leading Russian and foreign universities, the Open University of the Dialogue of Civilizations and its affiliates. The author departs from the traditional schemes of textbook designing on political economy as the definition of its subject and place among sciences about society, as well as in a wide range of the issues of economic statics, dynamics and genetics, its reproduction, economic categories in their modern sense, considers the relation of economy with other components of the genotype of civilization, sets out the prospects for overcoming the current global crisis and the formation of the integral economic system, socially, noospherically- and innovation-oriented.

The textbook focuses not on the systematic presentment of the customary views of the economic theory that expresses an outdated industrial paradigm of economic thought lost its creative and predictive power, but on the elucidation of complex and multivariate process of establishing an integral humanistically noospheric economic system, on the development of students' ability to assess critically situations and to find efficient ways out of them on the basis of a new paradigm that is adequate to the actual conditions and contradictions of the economy and society of the 21st century.

The textbook is aimed at different groups of readers. First, active thinking university teachers who seek to transmit a system of knowledge to a new generation for orientation in the new, radically changing world, to develop students' ability to creative thinking and innovative actions. Second, leaders of the new generation who have felt the blows of the civilizational crisis and mass unemployment first-hand and seek to change the world for the better, and relying on the new system knowledge, to take the offensive (a mongoose before a cobra, not a rabbit before a boa) position. The textbook may be of interest to scientists who want to understand the essence of the radical changes going in the economy and society, and to adopt the main points of the new paradigm of social science that meets these conditions. If the ideas laid down in the textbook are received by representatives of such three groups, the author will regard his duty fulfilled to future generations.

CHAPTER 1. SUBJECT, METHODS AND EVOLUTION OF POLITICAL ECONOMY

Let us begin our journey into the unknown world of the updated political economy from the answer to legitimate questions: what is the political economy and how it fits into the system of economic and social sciences? What are the evolution stages of political economy? What methods of knowledge does political economy use?

1.1.The Subject of Political Economy of Civilizations

«The Branched Tree» of Knowledge

Mankind lives in a diverse and rapidly changing world. In order to live successfully and act effectively, you need to understand the laws of its structure and development, and skillfully use them in own conscious activity. To do this a science exists. According to a biblical legend, Adam and Eve led serene consumer life in the Garden of Eden until they have tasted the fruit of the tree of knowledge of good and evil. Expelled from Paradise for that people were forced by the sweat of their brow to earn their daily bread, create own history, and take responsibility for their successful or unsuccessful actions. So with the knowledge the history of mankind began.

As the science evidences, about 10 thousand years ago the Neolithic revolution began when the primitive communities changed from a consumer use of the gifts of nature to the artificial reproduction, farming and animal husbandry. This required the use of the accumulated applied knowledge and the new organization of society on the basis of reproduction. It was the beginning of modern triad of basic concepts – science, noosphere and civilization.

Over the past millennia, the volume of scientific knowledge and methods of their application quickly accumulated, which served as a basis for moving from stage to stage of civilization. The qualitative leap occurred five thousand years ago, when the local civilizations - states, private property and the market emerged. Two and a half millennia later, in the period of a great scientific revolution in ancient Greece there emerged a system of abstract sciences, and Aristotle formulated the idea of political economy (4th century B.C.).

The Subject of Political Economy

The subject of political economy is the categories and regularities of development of the system of economic relations and their interaction with other sides of society life (production, exchange, distribution and consumption of goods and services). Other, narrower definition of the subject is the economic component of the genotype of civilizations and its interaction with other components (socio-demographic, natural-ecological, technological, socio-cultural, and public-political).

Both definitions are correct and complement each other, but for their understanding one needs to define the terms used.

Basic Terms

Material benefits are the objects of nature transformed by human labor which are needed to meet personal and social needs. They can serve both as a commodity and not in the form of commodities for own consumption.

Services and activities are aimed specifically at meeting the needs of people or society as a whole. Services can be paid and free, include both the turnover of material assets and intangible or internal benefits. According to A. Storch - health, education, and knowledge (science, culture and art, morals and religion as well as internal and external security as the elements of civilization).

Production is the process of creating material benefits and services required to meet the needs of people and society. Mutual exchange of products of labor between consumers and producers of material benefits and services (in kind or in the form of commodities).

Distribution is the appropriation of the results of reproduction by different social groups involved in the process of reproduction.

Consumption is the use of production results in the individual (family) household or in the state sector of economy.

Local civilizations are social mega-systems covering large groups of nations and ethnic groups with a common system of values, historical experience and the reproduction conditions; historical epochs of development of global civilization and generations of local civilizations.

Global civilization is a set of local civilizations and their interaction fields.

Place of Political Economy in the System of Sciences

The diversity of the world of nature and society distinguishes the branched tree of knowledge of this world, where every branch of knowledge has its own niche, and interacts with other sectors. If you build a pyramid of Sciences system, its apex is the philosophy as a general theory of knowledge, representing the general scientific paradigm (worldview). On the lower floor there are generalizing sciences of various spheres of knowledge of the world - natural, human, social, environmental, and technical sciences.

On the next floor there are fundamental sciences by individual areas of these groups of scientific knowledge. Political economy is on this floor of the pyramid of knowledge, interacting with the adjacent branches of social sciences: sociology, history, political science, culturology, civiliography, jurisprudence, etc.

The base of the pyramid is represented by an extensive network of applied sciences, realized by the fundamental scientific knowledge in various kinds of such practical activities. With regard to the economic sciences these are sciences functional, sectoral, regional, statistical-mathematical, and others. They can be divided into sub-sectors (for example, the economy of various industries, agriculture, etc.). Consequently, political economy is the pinnacle, the theoretical basis of the system of economic sciences, giving them the fundamental knowledge for practical use in various types of economic activity. At the same time it gets testing of truth of its points in practical activity for the implementation of knowledge received.

Methods of Political Economy

In political economy, as well as in other social sciences, it is impossible to set up an experiment to test the validity of the proposed research and concepts. Here, the following sources of knowledge are used:

• methods of economic statistics, the quantitative measurements of processes occurring in the economy, changes in expressing the trends of economic dynamics;

• economic-mathematical modeling allowing to get a general idea of the regularities and trends in the development of economic processes;

• inter-country and inter-civilizational dimensions, revealing the features of manifestations of the features of economic relations and development tendencies in different civilizations and countries on the basis of accumulated knowledge and inferences about the regularities and relations of economic systems.

Because, unlike the natural sciences, in economics there are no reliable methods of checking the validity of the proposed research and concepts, and economic life directly affects the interests of different civilizations, countries and social strata, there are inevitably present the diversity of scientific schools and the struggle between them.

1.2. The Evolution Stages of Political Economy

The Origin and Formation of Political Economy

The concept of political economy as the science about the household was formulated by the greatest scientist of antiquity - Aristotle in the middle of the 4th B.C. Such an understanding of the content of political economy was not accidental. The economic basis of ancient and subsequent to the medieval world civilizations was the household of slave owners, then feudal and peasant family households and communities. The market existed and rapidly developed through efforts of merchants and usurers, but it was not the basis of social reproduction.

Political economy as a science began to form in the era of the early industrial world civilization on the basis of the manufacturing capitalism, emergence of which Fernand Braudel considered the first industrial revolution. The epicenter of this evolution was France and the UK, because it is in these countries began to form the political economy of market-capitalist economy.

From the industrial revolution of the late 18th - early 19th century is associated a rapid rise of world industrial civilization, the economic basis of which was industrial capitalism. The epicenter of this revolution was the United Kingdom, because not by chance that here was born the classical political economy, expressed in major works of Adam Smith in 1776 (whose 240th anniversary is celebrated in 2016) and David Ricardo (1817 - 200th anniversary next year). They penetrated deep into the anatomy of the functioning of market-capitalist economy, considering it the basis for the functioning of the capital in the pursuit of profit and the regulation of the economic system by the "invisible hand of the market". They left aside a part of the non-market economy, which included the natural family household and reproduction of intangible benefits.

The industrial capitalism has achieved high rates of economic growth. By the middle of the 19th century it became more and more apparent its fundamental contradictions - both economic and social.

The Marxist Political Economy

In "Capital" of Karl Marx it is not only reflected the deepest insight into the mechanism of functioning and development of market-capitalist economy, but also shown its transient nature, the inevitability of replacing it with a new economic system based on social ownership and a planned economic management. In the "Critique of the Gotha Program" are given the key points of the political economy of communism, then developed by V.I. Lenin in the "State and

Revolution".

After the October Revolution of 1917, it was made an attempt to shift to an economy of "war communism", based on the nationalization of land, industry, transport, banks, replacing the turnover with direct product exchange with the use of so-called trades (labor units of account) and direct regulation of production by the Supreme Council of National Economy and central offices for industrial management. But life showed utopian and inefficiency of these measures in the vast peasant country. Already in 1918 it was issued a decree on fixed prices for bread and established the Committee for Fixed Prices of the Supreme Council of National Economy, which functioned in subsequent years.

With the transition to the NEP it was formulated more rational model of political economy that relied on the recognition of a multi-order of economy and a combination of planned and market methods of its regulation. This model gave excellent results: in a short time economy destroyed by the Civil War was restored and developed rapidly, the market was saturated with various goods, living standard grew in urban and rural areas, and the Russian gold chervonets became listed on international stock exchanges.

During this period steps were taken to simulate the functioning of this economic model which was most vividly expressed in the works of N.D. Kondratieff about forecasting, in the draft five year plan for the development of agriculture and forestry in Russia worked out by him. It was the first long-term indicative planning of planned-market economy. High achievement of this period was the development by N.D. Kondratieff of the theory of foresight and connection of long-term forecasts with the plan.

However, in the coming decades as a result of forced collectivization and super-centralization of economic management this experience of planned- market running the economy was rejected and replaced by a centralized bureaucratic planning. This method proved itself during the Great Patriotic War. But in the post-war decades they turned to it again. In 1970-1980s, with the active participation of A.I. Anchishkin there was developed and updated every five years a Comprehensive Program of scientific and technological progress and its social and economic consequences for the 20-year period. It became the basis for the development of five-year plans. All these steps were based on the active development of political economy of socialism by the Soviet economic science. At the same time there was exaggerated the importance of planning, they proved the inevitability spreading the socialist mode of production throughout the world economy.

By the beginning of the 21st century it became clear that both market-capitalist form of running economy, which degenerates into a virtual "bubble economy" with its theoretical base economics and rigidly centralized planning model, weakly taking into account and poorly used the market mechanism, have come short. In addition to the general crisis of the industrial civilization and market-capitalist economy it began the process of forming the integral, humanistucally-noospheric civilization and integral economic system adequate to it[1]. These processes are thoroughly studied in the works of modern Russian civilizational school that develops the theory of the formation of the integral socio-cultural system of Pitirim Sorokin and noospheric civilization of Vladimir Vernadsky and Nikita Moiseev. The revival of updated

[1] *Kuzyk B.N., Yakovets Yu.V.* The Formation of the Integral System As a Global Transformation of the 21st Century. M.: INES, 2008; Yakovets Yu.V. The Global Economic Transformations of the 21st Century. M.: Economika, 2011.

political economy that reflects the conditions of the functioning and development of a new economic method of production is based exactly on it[1].

The Crisis of Political Economy

In the last quarter of the 20th century the market capitalist system entered the last phase of its life cycle. Categories of political economy discovered by Adam Smith and Karl Marx, turn into its opposite. The real economy is being ousted by a virtual "bubble economy", prices have lost their connection with the cost and became a "crooked mirror" of economic processes. Money ceased to function as a measure of value and world money and became unsecured paper or virtual signs of money. With the dominance of monopolies and multinational corporations it loses their meaning the law of value and the law of supply and demand. The cost categories have become a powerful tool for the redistribution in favor of the countries of the golden billion and the utmost rich establishment. This led to excessive polarization of income, when the wealth of 1% super-monopolists exceeded revenues of 99% of the other population.

All this is reflected in the fate of political economy, which began to be ousted by economics - first in the West, and from the 1990s in Russia and other former Soviet countries. Teaching of political economy ceased in most universities.

However, the global crisis of 2008-2009 and waves of crisis shocks showed the futility of economics, which is not able to reveal the underlying causes of global civilizational crisis and to identify reliable ways to overcome it. The anti-crisis programs taken on the basis of economists' advice are unsuccessful, often lead to a deepening of economic and social contradictions and undermining of the foundations of the economic system. All this indicates the crisis not only of economics but also previous schools of political economy.

However, at the beginning of the 21st century it became apparent that in the depths of a decaying industrial economic system it emerges a new, integral economic system that meets the conditions of formation of integral, humanistically noospheric civilization. This creates the conditions for the revival of political economy in an updated form, corresponding to the world of civilizations of the 21st century.

The Formation of Political Economy of Civilizations

Amazing for the Russian political economists fact is that they did not notice that after the publication of Adam Smith's seminal monograph, and a year before the publication of David Ricardo's work, Saint Petersburg in 1815 200 years ago it was published (in French) "The Course of Political Economy" of Andrej Storch - the first Russian Academician Economist[2]. This was a major contribution to the development of economic thought, and it did go unnoticed in the West. This was the course that complemented the theory of market-capitalist economy of Adam Smith by the theory of civilization (the second part of the "Course of Political Economy" was so titled "The theory of Civilization"). It was the world's first book on the theory of civilizations, which was followed by books on the history of civilizations by Francois Guizot and Thomas Buckle.

The essence of scientific discovery of Andrej Storch was that he complemented the

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[1] Questions of Political Economy. 2015. No.2.

[2] *Storch A.* The Course of Political Economy, or a Statement of Principles Causing the People's Welfare. M.: Economicheskaya Gazetta, 2008.

political economy of the capitalist market economy by the theory of reproduction of non-market internal benefits (which he called the elements of civilization) - health, education, science (knowledge), culture, cult (religion), morals, internal and external security. He argued that only if the necessary proportions in the development of the market and internal benefits it is possible to achieve national prosperity.

While this approach was no adopted by the classical and Marxist political economy, however, it was continued in Russia (I.V. Vernadsky, partially M.I. Tugan-Baranovsky). A major contribution to political economy was the theory of economic statics, dynamics and genetics by N.D. Kondratieff[1]. Many steps in this direction were made by the head of Russia's political and economic school L.I. Abalkin who showed that in a dispute with A. Smith Andrej Storch took over. Modern methods of calculating gross domestic product takes into account the labor costs both in the sphere of market economy, and in the sphere of spiritual reproduction in non-market economy sector[2]. Therefore, it is not just about the revival of political economy, but about its establishment in the updated form as the basis of the integral economic system of civilizations. Yu.V. Yakovets, B.N. Kuzyk, G.N. Tsagolov develop the points of this political economy.

This is determined by two factors. On the one hand, in the 21st century there goes a process of a change of civilizational cycles. In place of the market-capitalist industrial world civilization it is coming up the integral, humanistically noospheric civilization with the economic system adequate to it - socially and economically- and innovation-oriented. It changes the subject of political economy, and science must change. On the other hand, the transformation process takes place in science itself, first of all, in social sciences. The result of the scientific revolution will be the formation and the prevalence of a new paradigm - scientific picture of the world changed. The leader of this process in the social sciences is Russia, because it found itself in the focus of a civilizational crisis of the end of the 20th - beginning of the 21st century that prompted to the search for new solutions; because here it is formed a spiritual and scientific tradition that goes back to the roots of the ancient Greek civilization with the priority of spiritual values (unlike the Western European civilization, in which the preference is given to material market values inherited from the ancient Roman civilization).

The methodology of the new political economy is not limited to static, equilibrium theory but is immersed in complex and contradictory world of cycles and crises, genetic regularities of heredity, variability, natural and purposeful selection in change of cycles. Its hierarchical structure covers all the floors of the economic pyramid - from the family household, microeconomics, mesoeconomics (regional economy), macroeconomics (national economy) to civilizational and integration associations (like the EU) and the global level - megaeconomics with their categories, regularities and development tendencies.

Time framework of the political economy of civilizations are limited: they begin with the

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[1] *Kondratieff N.D.* The Basic Problems of Economic Statics and Dynamics. M.: Nauka, 1991.

[2] *Yakovets Yu.V.* Cycles, Crises Forecasts. M.: Nauka, 1999; *Kuzyk B.N. Yakovets Yu.V.* Civilizations: Theory, History, Dialogue and the Future. Vol. 1. M.: INES, 2006; *Kuzyk B.N., Yakovets Yu.V.* Formation of the Integral Economic System As a Global Transformation of the 21st Century. M.: INES 2008; *Yakovets Yu.V.* Global Economic Transformations of the 21st Century. M.: Economika, 2011; *Yakovets Yu.V.* The Political Economy of the 21st Century: Historical Roots and Prospects. M. 2015.

Neolithic revolution and the emergence of civilization, about ten thousand years ago, the emergence of local civilizations, the market and the state five thousand years ago, cover the economic structure of the early class, ancient, medieval, early industrial and industrial world civilizations and the main outlines of formation and establishment of the integral world civilization of the 21st-22nd centuries. On the further course of economic life is premature to judge, we can only say with reasonable confidence that if the course of civilizational development and progress will not be interrupted by a disaster, then the process of changing the Kondratieff cycles and civilizational cycles will continue (subject to the law of compression of historical time); by the end of the 22nd century one can expect the next civilizational crisis and becoming of the eighth world civilization, the content of which is still unknown. With regard to this approach, the logic of construction and presentation of the political economy of civilizations is built.

The first five chapters are devoted to the presentment of the subject of political economy of civilizations, its methods and stages of development, regularities of the economic statics, dynamics and genetics (cyclically-genetic approach) - theory of reproduction as the core of political economy and a brief excursion into the stages of development of pre-capitalist market-capitalist economy.

The next four chapters characterize major categories of market-capitalist economy and its evolution up to the modern degeneracy: goods, money, price; labor, wages and incomes of population; property, capital and profits; rent, anti-rent and quasi rent and other basic categories. The following five chapters reveal the mechanism of interaction of economy with the other components of the genotype of civilization:

- ✓ dynamics and structure of population, agriculture;
- ✓ natural-ecological factors of economic growth, involvement in the production of new natural productive forces;
- ✓ technological base of reproduction, change of generations of equipment, technological orders;
- ✓ mutual influence and interaction of the state and the economy, the increasing influence of science, education, culture and ethics on economy;
- ✓ regularities and tendencies in socio-cultural dynamics. The textbook ends with the statement of the regularities of the formation and dynamics of the global economy, the forecast for formation and the main contours of the integral economic system as the basis for an integral, humanistically noospheric civilization.

The Organization of the Study of Political Economy

The independent course of political economy must be introduced in all universities as a general studies, but with a certain specialization for groups of natural science, social, humanitarian, technical and artistic professions. For students receiving special economic education it requires a deep study of the course by a detailed program with exams, preparation of coursework or diploma work.

However, the main purpose of the study of political economy is an additional professional

education, qualification raising, distance and independent learning. This is important because the majority of university graduates in the past two decades has not studied political economy and has a distorted view of the actual economic processes and regularities derived from the courses in economic theory and economics. One should not expect that the officials from education and heads of economic chairs quickly develop mandatory standards and include political economy in the mandatory disciplines. Rather, it is expected the opposite - the resistance to this process. Therefore, it is necessary to start from the bottom, as an initiative, based on the two channels of spreading of a new discipline. First, the translation into the main languages and placement of the textbook in the publicly available Internet on a dedicated website. This will make it available for teachers and for students of all categories. Second, it should be actively promoted the training of teachers at specialized seminars and qualification upgrading courses organized by the Open University of the Dialogue of Civilizations and interested leading universities around the world.

To do this, the ideas of revived and updated political economy should become widely known, so it is necessary to conduct scientific conferences, discussions, and place publications in the media and on the Internet. With the active conduct of such a policy it can be expected that in about a decade a revived political economy will get wide recognized and take its rightful place in the formation of world-view of a new generation.

What Does the Study of Political Economy Give?

The study of political economy in the updated form creates the following advantages. First, it gives the students a real idea about the forthcoming changes and changes in the economic life of society, allows getting rid of the erroneous views and ideas and carry out more confident own labor activity, consciously participate in innovations needed to replace the obsolete industrial, market-capitalist system with the integral, noospheric-humanistic system that meets the realities of the 21st century. Second, the profound digestion of political economy will allow professionals and economic executives more effectively carry out their functions, successfully overcome the crisis phases of economic cycles and improve stability and efficiency of economic development in an increasingly limited human and natural resources.

Third, mastering of the basics of political economy of civilizations will accelerate the surmounting of civilizational crisis and the establishment of an integral, humanistically noospheric civilization - first in the vanguard, and then in catching-up and lagging civilizations and countries. Fourth, the formation of the renewed political economy in Russia shows that it is the country which located in the focus of the contradictions of modern civilizational crisis country has become the center for the formation of a new paradigm.

Control questions and tasks

1. What is the political economy, what place does it occupy in the system of social sciences? Show its relationship with other sciences.

2. How does it manifest a civilizational approach of political economy?

3. What is the relationship between local, world and global civilizations?

4. Give the definition of political economy in the broad and narrow senses and show the connection between the main categories of political economy.

5. What caused changes in political economy in different historical epochs, in different world civilizations?

6. What are the differences between the classical and Marxist political economy and the course of political economy proposed by Andrej Storch?

7. What caused the current crisis of political economy? Can Economics replace political economy?

8. How can it be organized a study of political economy and its inclusion in various forms and stages of education?

9. What is interesting for you to study political economy? Will it be useful in your life and work? Show it by example.

CHAPTER 2. ECONOMIC STATICS, DYNAMICS AND GENETICS

In distinction from the classical political economy, the modern political economy of civilizations is based on the cyclical-genetic regularities of evolution of economic systems. The foundations of the theory of economic statics, dynamics and genetics were laid in the monograph of N.D. Kondratieff “The Main Problems of Economic Statics and Dynamics. Preliminary Sketch" that he wrote in the Butyrskaya prison and published in 1991 only. It is his largest contribution to political economy that is still little demand in Russia and is not known abroad. It was developed in the monographs of Yu.V. Yakovets "Cycles. Crises. Forecasts" (1999), "Global Economic Transformations of the 21st Century" (2011), B.N. Kuzyk and Yu.V. Yakovets "Civilizations: Theory, History, Dialogue and the Future" (2006).

2.1. Economic Statics and the Law of Proportionality

The Concept of Economic Statics

Under the economic statics it is generally understood the regularities of functioning of the economic sphere and its interaction in the conditions of a balanced proportionality in the state of equilibrium. Any system, including economic, can function and develop normally in the conditions of internal and external proportionality, balance of the components of the system and super-system. This determines the maximum efficiency of its functioning.

Karl Marx, identifying the mechanism of the law of proportionality under capitalism, noted that the iron law of strictly defined proportions acts at enterprises, but on a scale of society the proportions are maintained spontaneously through their persistent violation, by competition and crises.

Proportionality is a dynamic concept. At different development stages of the economic system of any level (from the family household to the global economy) and under various external conditions of its operation the proportions vary. In political economy (including in the political economy of civilizations) we are talking about these kinds of proportions.

First, reproduction proportions - in the distribution of the social product, consumption and accumulation, the ratio of division of social reproduction, between reproduction sectors - consumer, energy and raw materials, innovation and investment, infrastructure, etc.

Second, sectoral proportions - among sectors of the national economy, sub-sectors within these sectors, between the suppliers of raw materials, energy, equipment, etc.

Third, the proportionality in the development of individual regions, cities, municipal unions within countries; between the countries in the world market in the process of territorial division and cooperation of labor.

Fourth, market proportions - between supply and demand, the amount of money in circulation and the need for them, in the functioning of financial-credit and monetary mechanisms, etc.

Fifth, proportions inside the individual factors of reproduction such as the ratio of the population size, number of working age and the number of pensioners, between technologies of various orders, in the distribution of investments between new construction and renewal of fixed capita.

Methods of Maintaining Proportions

Maintaining a certain proportion in the family household and at enterprises is the question more organizational and technological; it is not within the competence of political economy. However, the maintenance of proportionality at the regional, national, global levels is much more complicated process fraught with errors and imbalances. There are two approaches to solving this problem. The *first* approach is neoliberal: give freedom to competition, and the "invisible hand of the market" in accordance with the law of supply and demand will provide itself optimal proportions. Not tradable goods and services will leave the market, and demand will increase for new products. The optimal proportions will establish sooner or later. The governmental interference may disrupt this process.

Against this approach, there are valid arguments. The free market is long gone for most goods and services. There is a market monopolized, where the powerful monopolies and transnational corporations dictate their terms, which leads to the emergence of new deep imbalances. Moreover, there are natural monopolies where competition is practically impossible, and they dictate their terms to customers. There cannot do without governmental interference.

The *second* approach is to transfer all the economic decisions in the hands of the state, in proclaiming the supremacy of the law of planned proportional development. However, the excessive planned centralization deprives producers of goods and services of the initiative and responsibility, gives their fate in the hands of many officials who seek to appropriate some of the results of other people's labor.

So, you need the third way - a combination of the market and the plan that is in China is termed "market socialism." The Nobel Prize Winner in Economics Wassily Leontief oriented to this way: the market blows the sails of the ship, but the helm must be held strong by the state in its hands. Specific volumes, assortment and reproduction of goods and paid services in the market sector of the economy, the volume of their production and the rates of updates are determined by their manufacturers being oriented by the market demand. At the same time, the basic proportions of reproduction, its update based on the basic innovations, and all the more so the conditions of reproduction in the non-market sector of economy (in the areas of spiritual reproduction, defense and security) the state determines in a planned way; it is like the captain on the economic ship directs its movement, especially in times of crises. Furthermore, it promotes the development of domestic and family labor households, which themselves determine what, when and how much to produce and consume without the intervention of the plan and the market. And the households consume 60% of world GDP. The state should take care that on the producers - small and medium businesses, which employ a significant part of the workforce – are not pressured by corruptionists and taxes, and transnational corporations - both domestic and foreign – do not dictate its own rules on the market in pursuit of superprofits.

2.2. Economic Dynamics: A Trinity of Cycles, Crises and Innovations

Types and Structure of Cycles

The economic life is dynamic, subject to cyclical fluctuations of varying duration and depth - from seasonal cycles due to the alteration of seasons (which is especially noticeable in the temperate and polar regions), short-term cycles lasting 3-4 years, medium-term of about 10 years (caused, as shown by K. Marx, periodic updating of technical base of production, a change

of generations of equipment and technology) to the half-century long-term Kondratieff cycles (related to the change of the prevailing technological orders), super long-term (millennial) civilizational cycles, changing every few centuries on the basis of epochal innovations (discovered by S. Kuznets and further refined by Yu.V. Yakovets) and historical super-cycles lasting for millennia. Each cycle begins with the crisis and ends with it. The crisis is followed by a phase of depression which is replaced by recovery that develops in the rise and ends with a new crisis. In the period of crisis and depression there are formed the bases of a new cycle, its establishment begins, and then the remains of the old cycle pass into a relict state at the periphery of the progress, in lagging industries and countries. At the bottom of the crisis recovery is the technological renewal as a result of the wave of innovation - improving (for short-term cycles), basic (for the medium- and long-term cycles), epochal (for civilizational cycles and historical super-cycles).

Functions of Crises

Crises are painful and destructive, but they are regular and useful, as they perform three interrelated functions:

✓ *destructive* ("creative destruction" by Joseph Schumpeter), destroying outdated, but still prevailing systems and their elements;

✓ *creative*, opening the way for the maturing more advanced systems and their elements;

✓ *hereditary*, clearing the hereditary genotype from outdated elements and enriching it with new elements adequate to the changed conditions.

Crises cannot be cancelled, but you can affect them to pass the crisis phases faster and with fewer losses. The methodology developed by me to overcome the crisis and recovery from them is shown in Fig. 2.1.

Cycles and crises are most clearly manifested in the economy, reflected in the rates of economic growth or slowdown, on the employment level (unemployment), price movements, financial and credit indicators. But their basis lies in the processes occurring in the technological base of society.

Exit Patterns of Crises

The crises are varied and painful, but not infinite. It is necessary to know the causes and factors of crises, regularities and ways out of them so that to pass the inevitable crisis phases of cycles faster and with fewer losses, giving up the illusion of the possibility of a crisis-free sustainable development. This will allow occupying not the position of a rabbit before a boa, but a mongoose before cobra, in times of crisis.

Exit patterns from the crisis were revealed by N.D. Kondratieff. He showed that two decades before the start of an upward wave of a major cycle it rises a wave of scientific discoveries and significant technological inventions that are then used in the form of basic innovations that change the technological base of economy. Following this there is a realignment of the structure, accelerating the pace of economic growth and changes in the structure of the world economy. This process is described in more detail in the monograph of Yu.V. Yakovets "Dialogues about Regularities and Ways Out of Crises". [26]

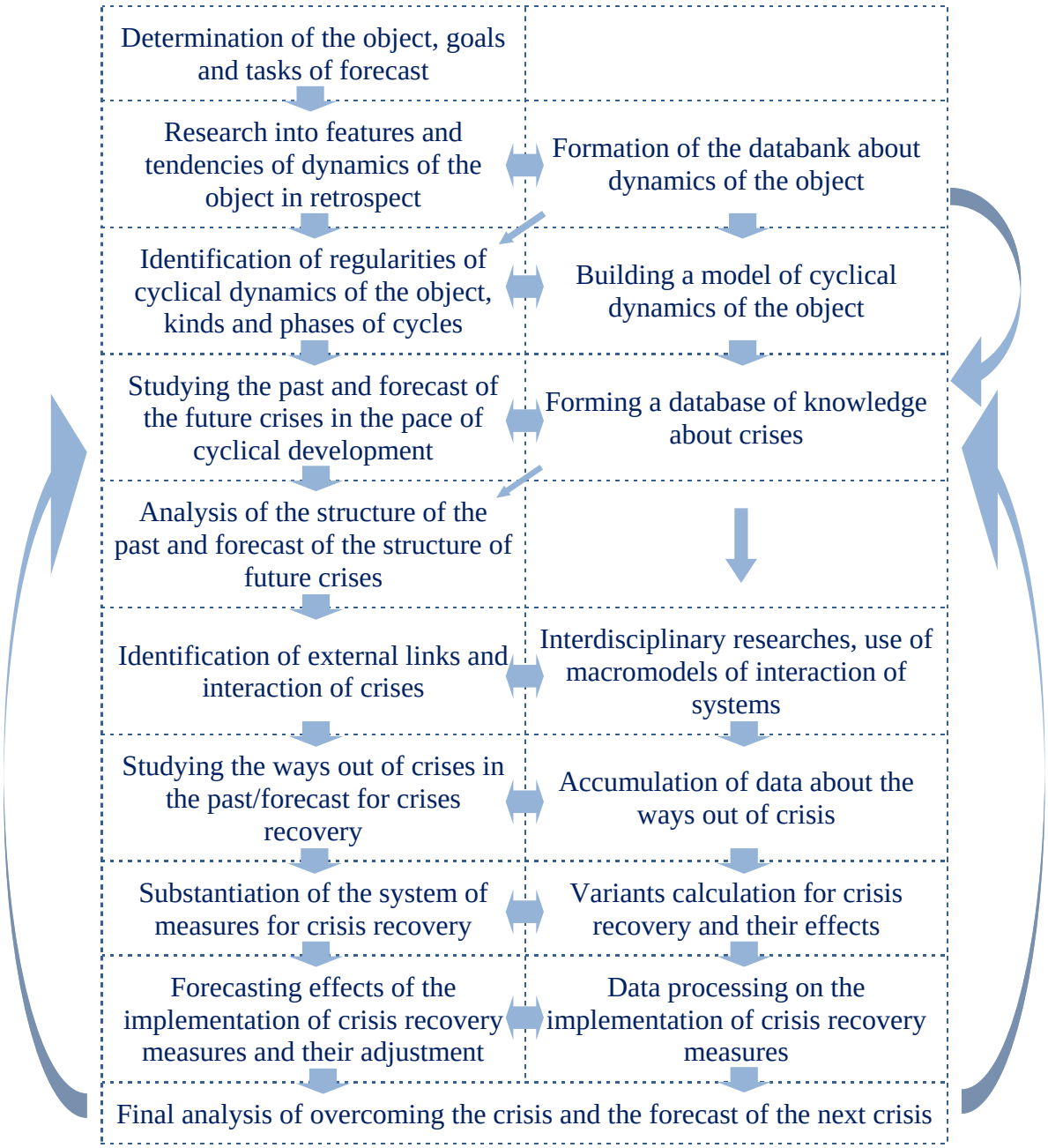

*Fig. 2.1.***A block diagram of crisis forecasting**

Anti-Crisis Programs

The state is not helpless in the face of crises. It must pursue an active anti-crisis policy. J.M Keynes who published in 1936 the monograph "The General Theory of Employment, Interest and Money" came to such conclusion[1]. It summarizes the anti-crisis "New Deal" of US President Franklin D. Roosevelt in overcoming the deepest world crisis of 1929-1933 and focused on the system of measures to ensure the employment growth and an increase in income of population and government investments as a prerequisite for overcoming the crisis. This position was supported by the United Nations in the post-war years.

[1]*Keynes J.M.* The General Theory of Employment, Interest and Money. M.: Eksmo, 2007.

The book of P. Sorokin, "The Basic Trends of Our Times" (1964) substantiates a social law of fluctuations of totalitarianism and freedom in conditions of deep crisis, shows that in this period it intensifies the government regulation of economy and other sides of life of society to overcome the crisis, and when the crisis is over, this regulation weakens.

Therefore, the theory of cyclical dynamics developed by a scientific school of the Russian cyclicism, makes it possible to overcome the crisis phases in the dynamics of economic and other social systems, to give them a substantiated diagnosis in a timely manner and to develop effective program to surmount the crisis and transition to a new stage of civilizational development.

2.3. Economic Genetics

Regularities of Socio-Genetics

Similar provisions on social and economic genetics formulated by M.M. Kovalevsky and N.D. Kondratieff, are developed by Yu.V. Yakovets, which has taken into account also the theory of A.A. Bogdanov about the mechanism of evolution of large social systems and introduced the concept of the genotype (heredity of the code) of civilizations (Fig. 2.2). [10]

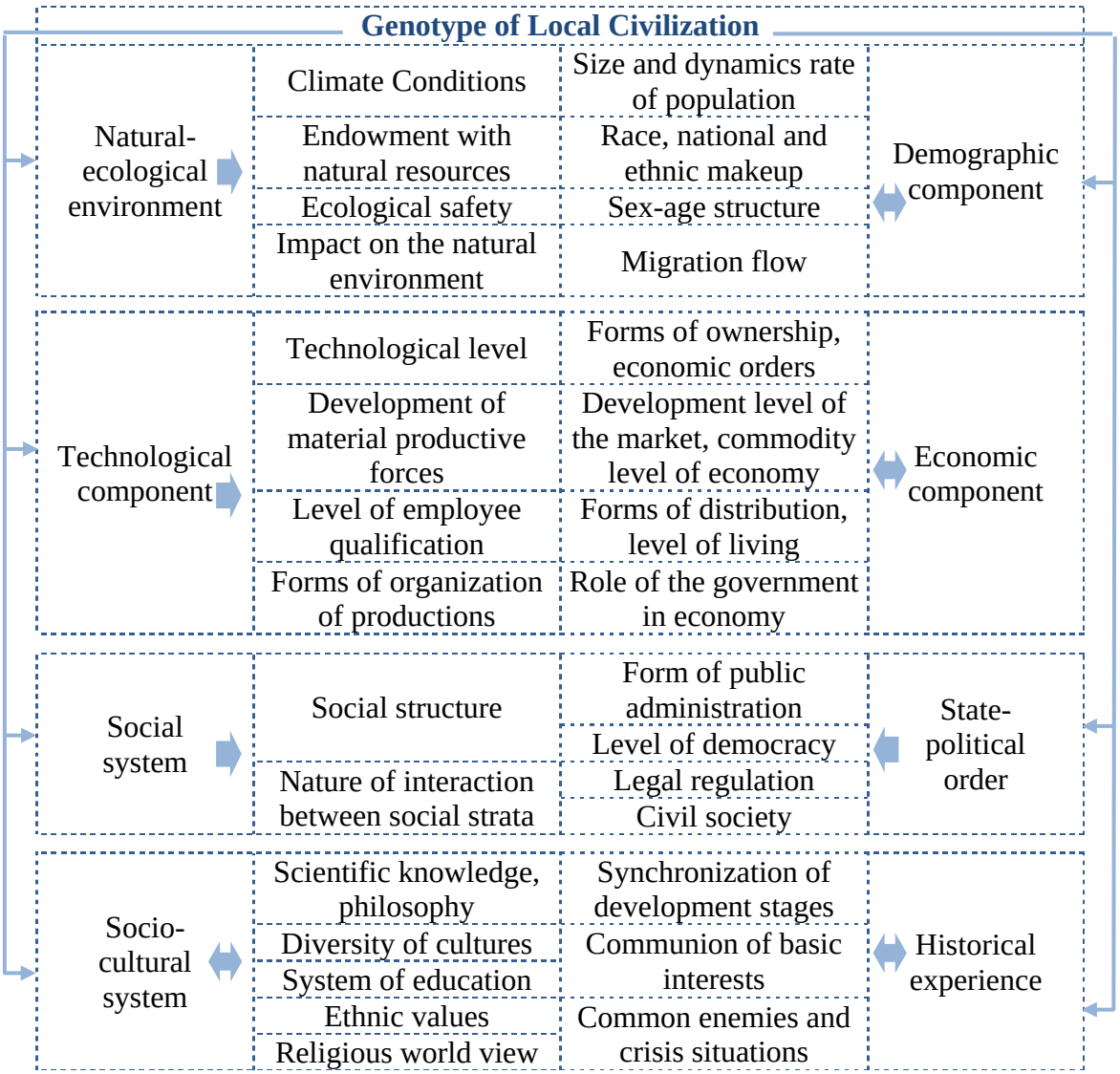

*Fig. 2.2.***The structure of the genotype of local civilization**

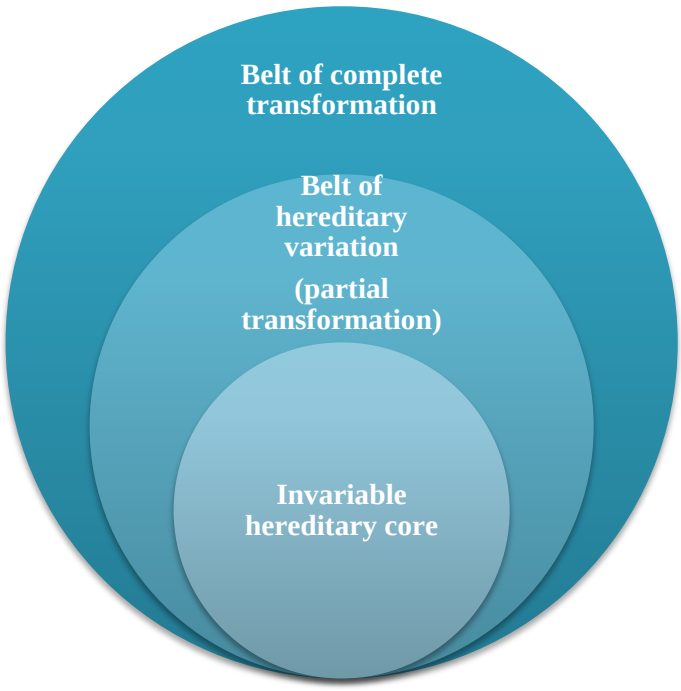

*Fig. 2.3.***Transformation scheme of social system**

The structure of a large system consists of three elements: the vital core of basic values, transmitted from generation to generation; the belt of hereditary variation that changes in the periods of deep crises to adapt to radically changing conditions of reproduction; the belt of complete transformation (Fig. 2.3).

There are formulated three regularities of socio-genetics. The *regularity of heredity* – transmission of the hereditary core of the system from generation to generation, maintaining the basic features and values of the system (e.g., local civilization). The *regularity of hereditary variation* – inclusion in the belt of variation changes in the genotype which allow the system to adapt to the changed conditions of existence and development. The *regularity of selection* of necessary changes to be included in the belt of hereditary variation. Such selection is carried out spontaneously or purposefully out of many possible mutations - useful, useless or harmful, leading to the past (such as the emergence in the 1930s of fascism and in the 2010s ISIS).

Cognition of socio-genetics laws allows avoiding the extremes in social revolutions, when the radical forces and their leaders seek "to the ground" to demolish the existing system. So it was during the Great French Revolution of the 18th century, the Russian Revolution in October 1917. The same extremes were observed during the breakup of the USSR and the change of socio-political system in the early 1990s.

The Theory of Transformation

The unified theory of cycles, crises and innovations as the theory of transformation is substantiated by us in the monograph "Global Economic Transformations of the 21st Century" [21]. The period of transformation in the change of civilizations and other socio-economic systems consists of two stages:

- ✓ a period of general crisis in the sunset phase of the outgoing system, the aggravation of contradictions and increase of polarization;
- ✓ a period of way out of crisis to a new level of development, establishment and

spread of a new, more efficient system on the basis of basic innovations.

Knowledge of regularities of static, dynamics and genetics allows substantiation of a balanced proportionality in the dynamics of economy and society, anticipation of cyclical fluctuations and inevitable crisis phases of cycles, substantiation of anti-crisis programs, taking into account the necessary depth and extent of transformation in the genetic structure of economy in connection with the replenishment of the other components of the genotype of civilization.

Control questions and tasks

1. What is the significance for political economy and economic policy of the study of economic statics, dynamics and genetics? Show it by examples.

2. How is supported the proportionality and balance in the functioning and development of economic systems?

3. Which of the three methods of maintaining proportionality seems to you the most effective?

4. Is it possible crisis-free development of socio-economic systems? Are the crisis phases of cycles inevitable, useful and predictable?

5. What are the patterns and ways out of the crises? Show it on the example of the present crisis in the world and in Russia.

6. Show the interconnection of heredity, variation and selection in the dynamics of socio-economic systems.

7. Will the regularities of economic statics, dynamics and genetics continue in future? Reinforce your answer by arguments.

CHAPTER 3. THE THEORY OF SOCIAL REPRODUCTION AS THE CORE OF POLITICAL ECONOMY

The core of political economy, its kernel is the theory of social reproduction as continuous renewal and development of all of its elements with maintaining optimal proportions. Alongside with that it is the most complex and difficult to understanding and foresight part of the economic theory.

3.1. The Concept, Structure and Types of Reproduction

The Concept of Social Reproduction

Reproduction is the most complex and changeable of all existing sides of life of local civilizations. Political economy should identify and assess the main stable links in this deep economic component constantly changing rates of functioning and updating in the continuous flow production, distribution and consumption of material benefits and services in conjunction with other components. This makes the essence and mission of the theory of social reproduction. Public reproduction in the civilizational context covers constant renewal and balanced development of all components of the genotype of civilizations in concert with the national economies, all kinds of resources and sources of development (labor, natural, technical, and investment-financial). Public reproduction changes under the influence of the medium-term, long-term, superlong-term (civilizational) cycles, it is constantly pulsating, providing vital functions of all systems - from the family to the global economy.

Reproductive Balances

For research, forecasting, analysis and regulation of the volumes of output it is used the system of reproductive balances of different character and dimension.

The first balance of national economy that disclosed the sectoral and reproductive structure of the national economy was developed under direction of the chairman of the USSR Central Statistical Board P.I. Popov in 1926 and included the performance balance for 1923/24 financial year and the forecast balance for the next year. Later it was developed under the guidance of S.G. Strumilin and widely used in the development of the first and subsequent five-year national economic plans. Based on the idea of suchbalance W.W. Leontief developed a reproductive macromodel ‘input-output’, which is termed interindustry (input-output) balance, and was widely used in many countries. On this basis, the United Nations group of experts headed by W. W. Leontief developed a global input-output balance used for making a forecast of the world economy in the period up to 2000[1]. (Currently no work on long-term forecasting based on the input-output balance is carried on in the UN).It would be advisable to resume this work as a basis for strengthening the regulation of global reproduction proportions).

The International Institute of Pitirim Sorokin - Nikolai Kondratieff (SKII) and the Institute for Economic Strategies (INES) used the methodology of global balance macro-forecasting with the involvement of geo-civilizational macro-models in making the forecast of the economic

[1]The Future of the World Economy. The Report of UN Experts Group headed by W. W. Leontief about World Economy Development. M.: Mezhdunarodnye Otnosheniya, 1979.

dynamics of civilizations for 2050[1], substantiation of a long-term strategy for global sustainable development based on partnership of civilizations (2011) and development of the System of long-term goals for sustainable development of civilizations (2015)[2].

Reproduction Proportions

In the analysis, forecasting and strategic planning of social reproduction, the place of prime importance is occupied a determination of proportions between private and public consumption and accumulation, distribution of resources between the current and future needs, that determines the rate of economic growth and social development. Thus, according to the World Bank, the share of gross capital accumulation in GDP from 2000 to 2013 decreased from 24 to 22% in high-income countries, and in countries with middle-incomes increased from 25 to 31% (in China - from 35 to 49%, India - from 24 to 33%). It is not surprising that under the average world GDP growth over this period, they made 2.8% in high-income countries, and 1.7%, and in middle-income countries - 6.2%[3].

3.2. Schemes, Balances and Models of Reproduction

Reproduction Schemes

The research of the structure of social reproduction study began with the publication of the economic table of François Quesnay in 1758. The "Capital" of Marx gives a social reproduction scheme that distinguishes between two divisions (production of means of production and production of consumer goods) and three elements in the structure of the transfer of the cost of capital (c), variable capital (v) and surplus value (m). This scheme was modified and complicated by V.I. Lenin to include the technical progress factor. According to the model of reproduction it has been written many monographs both in the USSR and in other countries, the law of the priority growth of production of means of production was substantiated, which underlay the industrialization policy pursued by the USSR and other socialist countries for decades.

The reproduction scheme of Marx, consisting of two divisions of social reproduction was enough for an aggregative analysis of these processes under conditions of the 19th – 20th centuries. However, in the second half of the 20th century it became apparent the need for the sophistication of this model in relation to a more differentiated structure of reproduction, which features became more pronounced.

The Polish political economist from Krakow added the third to the two divisions - the reproduction of services - and built a new, sophisticated scheme of reproduction subject to the exchange between the spheres of services and the two divisions of the material reproduction which formed K. Marx's model. I studied this problem and showed the need for the introduction of one more division - production of military equipment, which products are not received in the other reproduction divisions, and accumulated and used in the event of armed conflicts, deforming the reproduction structure.

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[1]Global Forecast "Future of Civilizations" for 2050, Part 1-10. M.: SKII, 2009.

[2]*Yakovets Yu.V.* On the System of Long-term Goals for Sustainable Development of Civilizations. Scientific Report. M.: SKII, 2015.

[3]World Development Indicators. Washington, The World Bank, 2015. Tables 4.1, 4.8.

The monograph "Prospects of Socio-Cultural Dynamics and Partnership of Civilizations" researched into the sphere of spiritual reproduction, showed its components, features, and interrelatedness with other divisions of social reproduction. In a number of papers I have researched peculiarities of reproduction of natural resources and the environment protection, a group of industries that are engaged in reproduction and use of natural resources, substantiated the need to distinguish a sphere of reproduction of natural resources in the input-output balance and reproductive-cyclical macro-model.

It should be noted that in the model of the world economy developed by W. Leontief and used in the development of a long-term forecast, it was distinguished six main areas of environmental pollution. Thus, it is now established the bases for the formation of a new social reproduction scheme enhanced and sophisticated with respect to the conditions of the 21st century, which more fully and adequately reflects the basic proportions in the functioning and development of macroeconomics.

Let us try to formulate the basic points of the new scheme of social reproduction that meets the conditions of the 21st century. It seems necessary to distinguish six divisions in the structure and the system of interrelatedness of social reproduction subject to cyclical fluctuations of economy.

I division – production of means of production (machinery, equipment, buildings, structures, materials) that are necessary for the functioning of the whole social reproduction, all its divisions; this is manufacturing industry, machine-building, metallurgy, building materials, construction of industrial buildings.

II division – production of consumer goods used for the reproduction of work force human and satisfaction of his material needs (housing, clothing, footwear, food, etc.), whatever division he works as well as to maintain the lives of those who cannot yet or already work, but needs means of subsistence and development.

III division – reproduction services both of an industrial nature, related to the circulation of material values, and social nature, needed to meet the basic living needs of the people. This division is connected with the previous two divisions by the results of its activities; it includes transportation, communications, housing and utilities, consumer and commercial services, etc.

IV division – production of means of defense and security necessary to ensure the country's defense, participation in armed conflict and to ensure population security. This division receives products from other divisions, but it supplies its products to them to the minimum extent. It refers to the end-use sphere, as well as the second division. The sphere of public administration can also be attributed to it.

V division – reproduction of natural resources and protection of the environment, ensuring the needs of production and people in natural resources, environmental conditions that are necessary for their functioning, as well as creating conditions for overcoming the periodically occurring natural disasters (earthquakes, floods, volcanic eruptions, typhoons, tsunamis, etc.).

VI division – renewal and development of the sphere of spiritual reproduction: obtaining scientific knowledge (science), transmission of knowledge and skills to next generations (education), and ensuring functioning of culture, moral foundations of society and religious values. This division could be attributed to III division, the service sphere, but its result is the reproduction of spiritual values, which are the basis for the development of society, so we

distinguish it in the independent sphere of reproduction.

Each of the six divisions interconnected with others, receives necessary means from them for functioning and development, and transmits its activity results to them. Effective functioning of the whole social reproduction, rates and efficiency of development of economy in the country and in the world depends on the ensuring the necessary proportionality between divisions, supplying them with natural, labor, material, intellectual resources in proportions sufficient for their effective functioning and development.

Another novation is the consideration of the scheme of social reproduction in the mode of cyclical dynamics with the distinguishing of the periods of extended, simple, narrowed and deformed reproduction. *Extended* reproduction is carried out in the phases of revival and expansion of economic and other cycles, responding to the fast growing needs and demand for goods and services for the products of all the divisions. *Simple* reproduction is observed in the short-lived phase of depression, post-crisis period and before economic recovery, when production is at the lowest level. *Narrowed* reproduction happens in the times of crises, major natural disasters, etc., when the reproduction process is curtailed and imbalances in its structure sharply intensify. The *deformed* reproduction can be observed in the periods of intensive militarization of economy, when there are violated proportions of reproduction, the fourth division hypertrophies to the detriment of all other units.

Account must be taken, especially in long-term forecasting, of the interaction of overlapping on each other medium-term phases (about a decade), Kondratieff long-term (about half a century) and superlong-term (civilizational) cycles. At the rising phases of cycles of a higher level there are observed higher rates of expanded reproduction, a moderate slowdown in the crisis phases of medium-term cycles. In descending periods of long-term cycles the growth rates slow down, and in the crisis phases are accompanied by a drop in production.

The peculiarity of the new scheme of reproduction is that in the process of analysis is included not only the sphere of commodity production, but also non-market economy. This is first of all the main part of the sphere of spiritual reproduction, home, family household, activities related to defense, public health, social security, public administration, etc. This opens up another aspect of the analysis of the complex interrelationships between the various sectors of economy, between market and non-market sectors in the process of social reproduction. The new scheme of social reproduction is connected with the reproductive-cyclical macromodel developed by us, by four reproductive sectors (consumer, innovation-investment, energy and raw materials, infrastructure) and the new model of cyclical-economic dynamics, which we discussed in the previous chapter.

There are mentioned above only the basic outlines of a new scheme of social reproduction adequate to conditions of the 21st century. The makeup and specific links between the six divisions of social reproduction in their cyclical dynamics remain still to be explored. Let leave it for young economists and mathematicians who are interested in this problem. We dwell below on one division, which we are the most interested in - the sphere of spiritual reproduction[1].

The proposed scheme to a greater extent meets the requirements of the political economy of civilizations, ideas of Andrej Storch. It should be noted that in this direction P.G. Nikitenko

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[1] *Yakovets Yu.V.* Global Economic Transformations of the 21st Century. pgs. 297-301.

works creatively in Belarus, who developed a model for the implementation of ideas, A.K. Storch and doctrines of V.I. Vernadsky of the noosphere in the monograph "Noospheric Economy and Social Policy: Innovation Development Strategy" (2006). Nikitenko proposed to carry out social reproduction by the model of harmonization of "nature - man - society" system in conjunction with space based on three divisions. His proposed scheme of reproduction, which includes three divisions of social reproduction, looks as follows[1]:

I $C_1 + V_1 + M_1 = P_1$;

II $C_2 + V_2 + M_2 = P_2$;

III $C_3 + V_3 + M_3 = P_3$;

$\Sigma C + V + M = P$,

where I - reproduction of means of production, including natural resources;

II - reproduction of items of consumption, including gifts of nature;

III – reproduction of man as a biosocial civilizational product (reason, knowledge, science, education, culture, and services);

C, V, M, P – reproduction of respectively fixed and variable funds, surplus product and gross national product (national wealth), man as the main, science-intensive productive force and noospheric medium of production relations. (Andrej Storch considered them the elements of civilization)[2].

3.3.Mechanisms for Social Reproduction Regulation

Self-regulation Mechanisms

Classical political economy investigates the self-regulation processes of social reproduction in order to maintain the necessary proportions in the process of its functioning and changing the proportions in the implementation of structural shifts, through competition and periodic economic crises, restoring the broken proportions.

In the market sector of economy at different stages of its development it goes self-regulation on the basis of competition and the constant violation of optimal proportions. The most severe form of restoration of the broken proportions is economic crises. The state has an impact on the proportions of budget financing of orders for a part of a social product, regulation of wages in the state sector, differentiated taxation, etc., as well as through the adoption of anti-crisis programs. At the same time, at enterprises and associations (up to the transnational corporations, the amount of funds which may exceed the budgets of small states) there are maintained centrally established proportions of reproduction, taking into account changes in market conditions. Then there are used cost tools (transport prices between divisions of corporation or transnational corporations, etc.). In the non-market sector of economy it prevails the governmental regulation of reproduction proportions: the development of social sphere sectors, military-industrial complex, and the state apparatus.

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[1] *Nikitenko P.G.* The Noospheric Economy and Social Policy: Innovation Development Strategy. Mn.: Belorusskaya Nauka, 2006.

[2] Ibid.

State Regulation of Reproduction

The State regulates the proportions and development rates of reproduction based on the systems of balances -financial (the main of them is the state budget), natural (e.g., fuel-energy balance) and naturally-cost and uses indirect methods, including taxation, social security, public contracts and benefits, etc. based on the development and implementation of anti-crisis programs that provide for measures to support employment, direct government subsidies, etc. Scientific bases for anti-crisis regulation of economy are worked out by J.M. Keynes and developed by the Keynesian and neo-Keynesian schools.

The International Regulation of Reproduction

The development of the international division of labor and the world market, strengthening criteria of globalization and the interdependence of national economies requires application of international regulation measures for the proportions of reproduction in the global economy. It is carried out on two levels - regional and global.

The most developed system of regional regulation of reproduction is applied in the European Union, which unites 28 national economies. Here it is applied almost the same instruments as at the national level - the budget balances, subsidies, taxes, etc. In 2012-2014, the regulatory measures were toughened; it is pursued by the International Monetary Fund. Being in the state of crisis, national economies (Greece, Portugal, Spain, etc.) there were given large loans on the condition of the introduction of austerity of the budget spending, including social. In fact, this is a mechanism of external control. In other economic unions and associations regulatory measures are much weaker and softer.

At the global level, in the process of regulation of the reproduction proportions there are participate international economic organizations featuring the International Monetary Fund, the World Bank, to a lesser extent the World Trade Organization, which determines the conditions of international trade in goods and services. There are also international organizations to address a narrower range of issues - such as the Global Environment Facility, UNEP, FAO, WHO, ILO, and WIPO.

Approved by the Summit on Sustainable Development in September 2015 Sustainable Development Goals until 2030 are also a form of regulation of reproduction providing for the eradication of hunger and poverty, universal access to affordable, sustainable and reliable energy supply, reduction of harmful emissions, etc. There are provided for measures for financial support to achieve the goals, although on a limited scale. Such a system of goals should be developed at the regional and national levels, which will require to strengthen the regulation of reproduction processes to achieve sustainable development goals (including the use of balances system).

3.4. Balance Methods of Analysis and Control of Reproduction Proportions

The Balances of National Economy

For analysis and planning of social reproduction proportions in the USSR there were applied balances of national economy. For the first time such balance was developed by the Central Statistical Office of the USSR and included the performance balance for 1923/24 financial year and the plan balance for 1924/25. It was built on the basis of data by the sectors of national economy and financial proportions. Further on, these points were developed by

S.G. Strumilin, the balances were built for each five years.

Interindustry Balance

Nobel laureate W.W. Leontief developed the ideas of the Soviet balance and worked out an input-output model which began to be actively used in the analysis and forecasting of interindustry balances. The balances included the data on the mutual exchange of products at "pure industries" of different dimensions - from several dozen to several hundred - and information on the structure of price and reproduction proportions. Since the 1980s, inter-industry balances were constructed using a system of balance sheet accounts. W.W. Leontief was the first to develop the input-output model for the construction of the forecast balance of the world economy in the 1970s. For 2000, the model was differentiated by groups of countries, sectors, taking into account the environmental pollution.

Geo-Civilizational Reproductive-Cyclical Macromodel

In 1990, we proposed to use for analysis and forecasting of the world economy in the civilizational context a geo-civilizational reproductive-cyclical macromodel. It was built on the basis of reproductive sectors and the components of the genotype of civilization and allowed taking into account fluctuations of long-term and superlong-term cycles. The model was used to analyze the structural shifts in the economy in 1995, 1996, 1997, and 2000, for analysis and forecasting of dynamics of local civilizations in 2006 and 2009, in grounding the sustainable development goals of civilization. This model allows identifying regularities, tendencies and prospects of social reproduction in the context of local civilizations and their groups by the elements of the genotype of civilization (socio-demographic, natural-ecological, technological, economic, socio-cultural and geopolitical) and reveal the connections of economy with other factors of reproduction subject to the periodic change of civilizational cycles.

Control questions and tasks

1. Why the theory of social reproduction can be considered as the core of political economy?

2. What proportions of social reproduction should be taken into account in the analysis and forecasting of the national and global economy?

3. What method of social reproduction regulation is most effective? Argue your answer.

4. Is it possible a combination of plan and market in the regulation of social reproduction?

5. Draw a scheme of the interrelation of three components of the balance method of analysis and forecasting.

6. What are the advantages of the macro-model of world economy of W.W. Leontief?

7. What are the features and the possibility of using geo-civilizational-cyclical macro model?

CHAPTER 4. THE ECONOMIC SYSTEM OF CIVILIZATIONS: CONTENTS AND HISTORICAL STAGES

The new economic category was introduced into the scientific circulation in 2008[1] and requires explanation - the disclosure of its content and evolution at different stages of civilizational development.

4.1. The Content of the Economic System of Civilizations

What is the Economic System?

In the Marxist political economy the generally accepted category is the *economic mode of production* as a set of economic relations and productive forces, which expresses the essence of a particular socio-economic formation and changing along with it.

Let us start by defining the category proposed. *The economic system is an economic component of the genotype of civilization, a set of social relations of production, exchange, distribution and consumption of the products of labor (materials benefits and services) needed to meet personal and social needs, specific to one or another world or local civilization.* It is a broader concept than the economic system, and is connected with the pace of change of civilizations.

Several explanations to this definition. The key role in the system of economic relations is played by property: who appropriates, uses in its own interests the means of production (in some civilizations also workers - slaves, bondmen), produced products of labor and surplus product. Based on the leading form of ownership, K. Marx defined the character of the socio-economic formation - the commodity-communal, slave-owning, feudal, capitalist and socialist (communist).

The economic system is multi-order, it combines the elements of the prevailing system, outgoing, relic and coming, where their correlation varies at different stages of civilizational cycles, in various local civilizations. The economic system is inextricably connected with the other components of the genotype of civilizations (socio-demographic, natural-ecological, technological, socio-cultural, state-political), it experiences their influence and influences them, changes together with them in the general pace of civilizational cycles.

The Features of the Economic System

The mode of production firmly fits into the Procrustean bed of the socio-economic formations, built on the western reference: primitive-communal, slave-owning, feudal, capitalist and communist. A so termed Asian mode of production that prevailed in the East did not fit into this scheme. The economic system of civilizations has a more well-defined dating of its beginning (the Neolithic Revolution 7-8 millennium B.C.) and the division by the prevailing world civilization - the Neolithic, early class, ancient, medieval, early industrial, industrial, coming integral and succeeding, and here it is clearly manifested the law of compression of historical time, acceleration of heart rate of civilizational development (with failures in

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[1] *Kuzyk B.N., Yakovets Yu.V.* The Integral Economic System as a Global Transformation of the 21st Century. M: INES 2008.

transitional periods)[1].

Another difference of the economic system is in its broader understanding as the subject of political economy-not only of production of goods and paid services, but also of spiritual reproduction, reproduction of natural resources and environmental protection, as well as domestic and family household. This approach is used by Andrei Storch unlike the approaches of Adam Smith, David Ricardo and Karl Marx.

The third difference is in the integral approach to the subject of study. There is no set on confrontation of orders. The economy is understood as a complex multi-order system, where each order occupies its own niche and acts in cooperation with other orders in the general stream of social reproduction, in the pace of successive civilizational and other cycles with recurring crises. This gives a clearer understanding of the pace and shift mechanism of the prevailing economic system - first in the vanguard, then in catching up, and then in the lagging by one or two historical epochs civilizations and countries.

4.2. Historical Dynamics Rhythms of the Economic System of Civilizations

The Birth of the Economic System

The history of civilizations begins with the Neolithic revolution - with the emergence of the social division of labor inherent in artificial reproduction - a radical change in the evolution of species Homo Sapiens, that allowed lessen dependence on the nature and change from a primitive lifestyle to productive[2]. However, this was only the first step on the way of the establishment of the economic system of civilizations. It took 5-6 thousand years so that the other elements of the economic system emerged and entered into force -production of goods, money, private property, the state as an active factor of the establishment of the economic system. Only from the end of the 4th millennium B.C., with the emergence of local civilizations, states, trade, etc., one can talk about the formation of a full-featured economy, economic system. Therefore, the period of existence of the economic system of civilizations can be estimated in about five millennia. The birthplace – a narrow strip to the north of the equator, in the valleys of great historical rivers and the Mediterranean, where it emerged local civilizations of the first generation - the Sumerian, ancient Egyptian, Indian, Phoenician, then Chinese, and Minoan.

The Economic System of the Early Class and Ancient Civilization

The economic system in the early class and ancient civilizations (the end of the 4th millennium B.C. - the middle of the 1st millennium B.C.) was about the same. It was based on natural agricultural economy of free or semi-dependent economies, based on private and communal property, and the slave economy of states, medium and large slaveholders. Construction of palaces, temples, pyramids, fortresses reached a significant scale; it required considerable costs to construct and maintain irrigation systems. Further development of social and professional division of labor got a powerful impetus. The trade fast developed on the basis

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[1] *Yakovets Yu.V.* At the Origins of a New Civilization. M.: Delo, 1993; *Yakovets Yu.V.* The History of Civilizations. 2nd edition, M.: 1997; *Kuzyk B.N., Yakovets Yu.V.* Civilizations: Theory, History, Dialogue and the Future. Vol. 1. M.: INES 2006.

[2] *Yakovets Yu.V.* The History of Civilizations. 2nd edition. M.: Vlados, 1997.

of big cities and trade routes, although commodity economy was not dominant. States minted coins, collected taxes, engaged in wars to grab the riches.

The international trade got a boost as a result of the Greek colonization of the Mediterranean and the Black Sea in the 8th-6th centuries B.C., especially in the formation of the first global empires – Achaemenids in Persia and Alexander the Great (in ancient Greece science and art reached the heights). In China, the empire of the Qin Dynasty emerged. It became the largest and most powerful the Roman Empire which won the southern part of Western, Northern and Eastern Europe, Asia Minor, Middle East, North Africa, created a model imperial economy with a strong territorial division of labor, tax and financial system, a well-defined legal regulation of economic relation. Economy and culture of India developed fast.

The Middle Ages Economy

In the middle of the 1st millennium A.D. as a result of the fall of the Western Roman Empire and the invasion of nomadic civilizations and tribes the ancient civilization wrecked. It was replaced by a millennial medieval civilization. Its economic basis was the feudal property of kings and their vassals ("multi-stage" feudal property), family and communal property. The craft prospered in the cities and the layer of merchants expanded who in the pursuit of commercial profit penetrated far beyond their country, developing a dialogue of civilizations. It was going an intensive exchange of goods and cultural values by the Great Trade Routes: the Great Silk Road, Volga Trade Route, the road "from the Varangians to the Greeks." It developed petty natural peasant economy, trade was the engine of civilizational progress. It was broken by endless wars and raids.

Civilizational space grew considerably, covering Western and Eastern Europe ("The Holy Roman Empire"), the Eastern Slavic civilization (Novgorod and Kievan Rus), the Byzantine Empire, the Empires in China and India. In Western Europe, it developed the guild system, and it grew the number of free cities united in the Hanseatic League.

The center of civilizational progress was in the East -in India, China, the Arab Caliphate. In 1000, China's share of global GDP was 22%, India - 28%, and Western Europe - 9%. In 1500, it was 25, 24 and 18%respectively.

The Development of the Market-Capitalist Economic System

From the 16th century it begins a new superlong-term stage in the history of civilizations that includes two world civilizations – early industrial (16th-18th centuries), industrial (19th-20th centuries), and the fourth generation of local civilizations (16th-20th centuries). The pendulum of civilizational activity has swung to the West - first to Western Europe and then to North America. The share of Western Europe in world GDP grew from 18% in 1500 to 23% in 1820 and 33% in 1913 (by the year 2003 decreased by 16%); the US share grew from 1.8% in 1820 to 27% in 1950 (by 2003 declined to 21%). The former leaders – China and especially India - degraded and have been ousted to the periphery. China's share in the world GDP fell from 33% in 1820 to 4.6% in 1950 (by 2003 grew to 15%); India's share fell from 24% in 1700 to 3% in 1973 (by 2003 grew to 5.5%) [1].

In the period of the early industrial civilization the *manufactory revolution* occurred

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[1] *Yakovets Yu.V.* The History of Civilizations. 2nd ed. M.: Vlados, 1997.

(which Fernand Braudel called the first industrial revolution). Based on the division of labor and market-capitalist principles the manufactories filled the markets with a relatively cheap goods ousting the craft-guild economy. From 1500 to 1820 the GDP production per capita in Western Europe increased by 2.8 times, and in the world only by 18%[1]. In the village and the lagging countries it dominated feudal relations, natural or semi-natural economy, which limited the growth of the internal market and the free movement of labor.

The discovery of America, the conquest of Africa, India, and Southeast Asia, Australia opened a space for the formation of the world market of original accumulation of capital, which ran in cruel colonial forms. There were destroyed the ancient civilizations of Central and South America, many people died of starvation and diseases. In America, the slave economy was revived on plantations with millions of slaves from Africa. It was a historic zigzag in the dynamics of the market-capitalist economy.

4.3. The Economic System of the Industrial Civilization

The Rise of the Industrial Civilization

This rise of the market-capitalist economy is connected with the industrial revolution of the end of the 18th-beginning of the 19th century, the establishment of the industrial capitalism, with its epicenter became Western Europe, and first of all England that created the powerful British Empire. Machine production, hired labor and capitalist enterprise gave a powerful impetus to the production, GDP growth. From 1820 to 1913 – less than for 100 years – GDP per capita in Western Europe grew in 2.9 times (over the world - in 2.3 times, in Asia only by 15%)[2].

The basis of the *industrial economic system* became market-capitalist economy based on the free movement of capital in the pursuit of profit maximization. “Capital" by Karl Marx is dedicated to analysis of the relationship of hired labor and capital. Joseph Schumpeter praised the capitalists as the innovators, constantly seeking to introduce new technologies and forms of organization of production for the sake of profit. But for the sake of the same they exploited mercilessly hired labor.

The industrial economy was not homogeneous. In the agricultural sector of most countries labor peasant farms dominated. The city retained a significant layer of petty entrepreneurs, craftsmen, merchants, and people of free professions.

It aggravated income polarization between nations and civilizations. While in 1820 the gap in per capita GDP between Western Europe and Africa was 2.1 times, then by 1913 it increased to 5.3 times, in 1973, it reached 9.3 times, and the gap between the US and India to 19.6 times.

The Stages Capitalism Development

A market-capitalist economy in its life cycle, lasting about 500 years, passed several stages.

The first stage - the period of the emergence of capitalism in the depths of the feudal economic system, in the framework of the early industrial civilization. You can call it the manufactory stage of capitalism, as the core of this stage was the original capital accumulation

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[1] Ibid. p. 382.
[2] Ibid.

and polishing a market-capital mechanism based on manufactories that flourished in Western Europe (though in Russia and in other countries there were manufactories based on bond service). This stage took about three centuries – 16th-18th centuries - and it was accompanied by the formation of the colonial empires, foundations of the world market based on the Great Geographical Discoveries.

The second stage covers the period from the last quarter of the 18th century until 1913. This is the *stage of the establishment and spread of capitalism* which from the period of free market competition changed to monopoly capitalism and imperialism. V. Lenin considered imperialism the highest and last stage of capitalism, however, he was wrong. This is not the last stage. It was followed by the highest stage, and from the last quarter of the 20th century the last stage came.

The third stage covers the period from 1913 to 1973 – 60 years. This stage, in turn, is divided into several periods. 1913-1945 - the period of the two world wars and the deepest crisis. It seemed to be the beginning of the collapse of capitalism, that it was doomed. The alternative economic system – socialist – emerged; it actively spread, withstood in the battle with almost all Western and Eastern Europe. The intellectuals of the world believed in the inevitable collapse of capitalism and its replacement by socialism.

However, it turned out that capitalism reserves are not exhausted. In the third quarter of the 20th century, received much from socialism, the monopoly capitalism transformed into *state-monopoly* capitalism with a social tint. It managed to achieve a record in the history of civilization, economic growth indicators - 4.9% average annual GDP growth, a significant increase in the level of consumption of the population, especially in high-income countries. However, it was the last splash of activity before the agony of market-capitalist system.

The Decline of the Capitalist System

Since the last quarter of the 20th century capitalism entered the decline stage, which will cover the first quarter of the 21st century. And then capitalism will go into the state of the relic in the descending, lagging behind the rhythm of civilizational changes, countries and civilizations changes. There are gaining strength the elements of the next *integral economic system*, which in the second quarter of the 21st century will enter the formation phase, and from the third quarter will be the dominant economic system of integral world civilization.

The last stage is characterized by the increase of signs of degradation, decay, parasitism of market-capitalist economy. This is evidenced by a number of signs. *First*, the decline in economic growth rates and increase in productivity, more frequent and deepening crises, increased volatility, chaotic development of economy. *Second*, the transition to the “bubble economy”, the virtual and parasitic economy where resources are taken from the process of reproduction and accumulation and forwarded to the stock exchange speculation. The major market categories - price, money, goods, profit - are losing their real content, turning into a mirage, and the economy itself - in "the kingdom of crooked mirrors". *Third*, the excessive polarization, the growing gap between rich and poor civilizations, countries, strata of population, a wave of unemployment, which particularly affected young people. All this cannot but cause socio-political explosions and shocks. *Fourth*, the elite of the passing world - not only political and business but also scientific – turned out shortsighted and helpless; it could not understand the essence of critical situations and develop an adequate response to them. Moreover, it becomes dangerous for civilization, threatening with the use of force for self-rescue and having

enormous military power, it can put civilization on the brink of self-destruction. This risk is exacerbated by the influence of the reactionary forces under the black banners of ISIS and terrorism.

But at the same time there are being formed and consolidated the forces at the opposite pole – the formation of an integral, humanistically noospheric civilization and integral economic system adequate to it. This process will be discussed in the closing, 15th Chapter of this textbook.

Control questions and tasks

1. What is the economic system of civilization and how does it differ from the Marxist understanding of the economic mode of production?

2. When, where and why civilization emerged and began to form the first elements of the economic system? In what did it express?

3. When did the formation of the genotype of civilization and economic system of civilization complete?

4. What are the characteristic features of the economic system inherent to the early class and ancient civilizations? Was it necessary and justified slavery?

5. What are the distinctive features of the economic system of the medieval civilization? Describe the features of local civilizations of East and West.

6. How did the process of establishment of a market-capitalist economy in the epoch of the early industrial civilization develop? Can we call this period the manufactory capitalism?

7. What role played the industrial revolution of the late 18th – beginning of the 19th in the formation of the industrial capitalism? What are the leaders of this revolution and show how it is spread across the planet.

8. What were the stages in the capitalism development? Was V.I. Lenin right, calling imperialism the highest and final phase of capitalism? Argue your answer.

9. How does it manifest degradation, parasitism and decay of the market-capitalist economy at the end of the 20th – beginning of the 21st century? What future awaits it? What is going to replace it?

CHAPTER 5. COMMODITY, MONEY, PRICES

Let us proceed to the discussion of the main categories of market-capitalist economy, grouping them into four triads: commodities, money, price; labor, wages, incomes of population; property, capital, profit; rent, quasi-rent, anti-rent. Among them, the original that functions more than five thousand years and underwent many modifications over the long historical path, is the triad of commodities, money, price. Let us begin from it.

5.1. Commodity and Its Duality

Two Sides of Commodities?

The definition of commodity is simple: a product of labor intended for sale on the market. Not only material benefits, but also paid services, proven mineral deposits, and forestlands fit under this definition. For this it is necessary that they are in someone property, and the system of labor division exists.

But behind this simplicity lies the trap of the dual essence of the image acting on the bargaining market between a buyer and a seller. Here commodities act as two-faced Janus.

One of his faces is a *use value*. In order a commodity to be purchased by the buyer, it must have utility that meets his needs. And the buyer compares different commodities to purchase the most useful. It makes a seemingly illogical comparison: it compares a measure of utility of a commodity which has many use properties, with its urgent need, and the capacity of its capital, which determines its purchasing power. These are seemingly non-measurable values. And if the choice is not in favor of a commodity – and it will remain a potential, but not the real commodity, a thing which nobody needs.

However, the seller cares about quite different – the *cost of a commodity* – amount of public and its work, which it has spent. And if it does not return these costs, it will not be able to continue reproduction. Costs will go for nothing, and it will be ruined. And it also need san additional income to develop and pay taxes to the state. And these operations of combination of the use value and the cost of commodities have taken place billions of times in all corners of the globe. And they are necessary and useful so that the manufacturer seeks to produce commodities that meet customer needs at an affordable price to them, and the buyer seeks to meet its diverse needs, buying the necessary set of commodities within its purchasing power, i.e. the most cost-effective samples.

The operation of the main law of the market economy – the law of value – manifests in it. And the accompanying law of supply and demand governing the proportions of production and consumption in the market economy over five millennia. Although the operation of these laws is not unsuccessful - a large number of producers, sellers and buyers of commodities are ruined each year - mankind has not invented anything else yet. Attempts to replace the market with natural product exchange or drawing thousands of plan balances of production and consumption of the products of labor have failed, gave rise to new imbalances.

Expansion of the World of Commodities

With the development of commodity production, the production of material benefits and services expanded and replenished with new commodity groups and types of commodities,

especially in the market-capitalist economy. People were commodities - slaves, bonded peasants. Money from usurers becomes commodity, and then in the form of bank loans. The subject of sale became the ownership title–to plots of land, forestlands, mineral deposits exploration, and then the intellectual property - inventions, utility models, industrial designs, trademarks, and copyrights. Public offices, the right to collect taxes were the subject of sale. At one time, trade in indulgence – absolution - flourished

It gradually formed a market of securities - shares, bonds, etc. Since the last quarter of the 20th century qualitative changes occurred in the market. The market capitalization of a small part of firms that are listed on the stock markets between 1990 and 2007 increased from 49 to 121% of the world GDP, but as a result of the crisis in 2008 fell to 59% of the world GDP, i.e. double, even though the real wealth of the world has remained about the same level. The "soap bubbles" burst. According to experts, the value of securities is three times higher than the world GDP. These are is not the real but virtual commodities. And indeed, on commodity exchanges they speculate in signs of commodities and not the commodities themselves (as is the case with crude oil Brent at the London Stock Exchange).

These speculative market games with the virtual commodities and signs of the ownership title are not as harmless as it may seem. A significant part of the capital is withdrawn from the process of reproduction and accumulation of capital, and directed to the stock exchange games. The virtual Economy of "soap bubbles" ousts real.

Such evolution of the market-capitalist economy proves that it parasites, becomes dangerous to society. It requires a return to the original natural meaning of commodities with determining a proportion between supply and demand, and the operation of the law of value within the market sector of economy.

5.2. Money, and the Metamorphoses of Their Functions

Functions of Money

Money - a universal equivalent, in which the commodity world saw a reflection of its value and with the use of which enriched the exchange in a variety of commodities many times, became a major invention in the history of the development of commodity economy. Through natural selection the functions of money fixed with gold and silver, which in a small volume had a significant value, could be stored for a long time, and were easy to divide. The State assumed certification of their value. For four and a half thousand years precious metals successfully fulfilled the functions entrusted to them by society:

✓ be the universal meter, measure of value of millions of kinds of various goods and services;

✓ be everyday means of circulation of a huge variety of goods and paid services in billions of transactions around the world;

✓ service as a treasure, means of accumulating of the wealth of both private persons and families, and states;

✓ perform the function of the world money in international trade between different states that minted their coins.

Signs of Money

Gold and silver became increasingly ousted by the signs of money and especially paper money, which were invented in China, but gained widespread currency in Europe. First paper money could be exchanged for gold, which was guaranteed by the state which printed paper money. But the state was tempted to issue paper money more than it was required for circulation. In the years of wars and ruins, inflation reached gigantic scales. After World War I in Germany there issued denominations of one billion marks. About the Soviet ruble Vladimir Mayakovsky wrote:

Boots clean - one million.

A Fortune!

Previously I would buy a house - and even good.

Accustomed to millions.

Even the distance to the moon

To the Soviet citizen seems nonsense.

In international trade, it kept long the gold standard, the troy ounce of gold was worth $ 35. However, after the Second World War, the function of the world money was assumed by the US dollar irredeemable in gold or unbacked by gold. The US Federal Reserve in consultation with the government prints green paper, exchanging them for real wealth. Other reserve currencies - the Euro, the Pound, and the Franc are pegged to the dollar. Thus it has been created a huge dollar pyramid, which sooner or later should collapse, pulling after it a seeming omnipotence of the American economy. The first rehearsal of this scenario occurred during the 2008-2009 global crisis.

5.3. Functions and Modification of Prices

The Market Queen

The price integrates the unity of use value and the cost of commodities, their relationship with money. The price is ultimately the Queen of the market. The price in the commodity economy has crucial, vital functions:

✓ act as a measure of value and use value of goods, necessary costs of live and social labor for their production and sale of goods;

✓ reflects the efficiency of production and economy of consumption, production, investment, economic decisions taken;

✓ is used to determine the value, wealth.

The Evolution of Prices

In the 19th century in the market-capitalist economy it took place a modification of the value type of price into the *price of production*. The price of production provides an equal rate of return on investment in different industries with different ratio of the constant (*C*) and variable (*V*) capital and different rate of use value.

With the transition to the monopoly stage of capitalism, it gained widespread use the model of *monopoly high prices*: highly monopolized industries and productions by setting

increased prices for their products received monopoly superprofit due to lower profit margins in the non-monopolized industries.

'The Kingdom of Crooked Mirrors'

Under the conditions of "bubble economy" the prices have lost their link with the value and use value, they no longer serve as a measure of efficiency of production, change rapidly and transform the economy into "The Kingdom of Crooked Mirrors." This can be judged by the behavior of prices for oil, energy and non-energy commodities (Tab.5.1).

In the mid-1970s as a result of the world energy crisis, world energy prices increased 7.9 times, and the relative prices compared to non-energy commodities - 8.6 times. It was the price revolution that changes all value relationship in the world and national markets. However, by the mid-1990s, there was a price adjustment: the index of energy prices fell double. Then it followed a period of slow increase in energy prices, sometimes interrupted by a fall in prices. As a result, by 2013, the energy price index rose in 4.6 times against 1995, and the relative prices - in 2.9 times. Since 2014 it began a new crash of energy prices, resulting in the price of oil fell in about three times by the beginning of 2016. This new burst of the system of value proportions and price relations led to a major interstate redistribution of world GDP in favor of energy importing countries. This process was accompanied by the increased use of energy-saving technologies based on the STR-21, and the struggle for the reduction of greenhouse gas emissions into the atmosphere. This will be inevitably followed by the bankruptcy of many businesses of the global energy sector, production cut and a backward wave of absolute and relative reduction in price of energy. The only question is when and to what extent this will happen. In any case it is obvious that with such price movements running of normal economy and implementation of expanded reproduction become impossible in many countries.

TABLE 5.1. World prices for oil, energy and non-energy commodities

Year	Average Oil Price		Energy Commodities Price Index		Non-Energy Commodities Price Index		Ratio of Energy and Non-Energy Commodities Prices	
	doll. per barrel	% to prev. year	2010 = 100	% to prev. year	2010 = 100	% to prev. year	2010 = 100	% to prev. year
1970	5	1100	9	789	96	96	19	857
1980	55	45	71	71	92	67	77	72
1990	25	-	37	-	62	-	55	-
1995	18	72	26	70	65	105	40	73
2000	33	183	50	192	57	88	88	220
2005	55	170	85	170	70	123	149	169
2009	64	114	83	-	86	123	97	65
2010	78	122	100	108	100	116	100	103
2011	87	112	118	118	110	110	107	107
2012	68	100	119	101	102	93	117	109
2013	92	105	120	101	96	94	115	99
2014	88	96	112	93	92	96	133	106

Source: 2015 World Development Indicators. Washington: The World Bank, 2015. Table 6.5.

Price Regulation

It is necessary to regulate the levels, and the ratio and price movements (including in the world market), to make them more justified and predictable.

This experience is available. It is not so much about the experience of price regulation in the USSR and other socialist countries (including those in mutual trade of countries - members

of the Council for Mutual Economic Assistance, CMEA), but also in a number of leading capitalist countries. For example, in the United States Franklin D. Roosevelt in the midst of the crisis of 1929-1933 established the Price Regulation Committee ledby J. Keynes. Later, in the mid-1970s, in the period of the sharp rise in prices it was established the Price Commission failing which consent the companies could not raise prices for their products. When the crisis was over, the commission was abolished. We are not talking about a return to the Soviet practice. In the context of the multi-order economy it is unrealistic.

But one should not provide full freedom to monopolists and speculators, considering the price a "sacred cow" of the market economy. It is necessary to develop reasonable mechanisms on the basis of the antimonopoly legislation, to regulate the prices for basic and socially important goods and services. Certain experience is accumulated in the EU in this area.

Control questions and tasks

1. How is it resolved in a commodity a contradiction between use value and value, interests of sellers and buyers of commodities?

2. To what extent is it justified the commodification of the securities, what is the result of it?

3. Why did money emerge and what functions does it perform?

4. What did the replacement of precious metals with paper money cause? Why does inflation arise?

5. Does money perform the functions in the modern market-capitalist economy? Will the role of the US dollar as the world money survive in the long term?

6. What functions does the price perform in the market economy?

7. Why have the prices ceased to perform their functions in the modern economy of “soap bubbles”, become the “crooked mirror” of economy?

8. Is the regulation of domestic and world prices possible?

CHAPTER 6. LABOR, WAGESAND INCOMES OF POPULATION

The study of the categories of political economy traditionally begins with the commodities. We begin with a broader concept - labor, the principle of reproduction and civilization, incomes, wages, and the main source of incomes of all groups of population.

6.1. Labor As the Basis of Reproduction and Source of Incomes

Did Labor Create Man?

It is widely known and generally accepted the point of F. Engels that labor created man, turned the troop of monkeys into the human community, and then in the human society. However, the noosphere theory allows us to look at the problem of the origin of man more widely. V.I. Vernadsky wrote that the source of progress is the law of development - increasing the weight and complexity of the brain functions in the genus of Homo (Man) and its species (which is about 40 thousand years old) Homo Sapiens (Wise Man). And if the right hemisphere functioning of the brain cortex, based on perception of the receptor signals (organs of sight, hearing, smell, touch), and the reaction to them is characteristic of all living organisms, the left-hemisphere functioning allows identifying the connections between the phenomena and understand their essence, determining the goals of the activity, specifically adapting to the environment. Therefore, the reason created man, and if we speak with respect to the subject matter of political economy - reasonable purposeful labor is the basis of the reproduction, the origin and development of civilization, the primary source of all types of income.

The Division of Labor

Labor can be individualized for each individual and collective - in the family, community, labor collective, and country. The collective labor is based on the division of labor - natural, social and professional.

The natural sex-age division of labor exists for millions of years - since turning the troop of monkeys into the community. This is primarily the division of labor between women and men. The man is engaged in procuring food. The woman - in child rearing, making food, and housekeeping. Young and adult take on the most complex types of labor. Adolescents and elderly - easier labor. The sex and age division of labor exists for hundreds of thousands of years, although some of the boundaries between them blur with time.

The social division of labor arose about ten thousand years ago, when the level of knowledge of the world allowed changing from participation in the processes of natural reproduction to the social reproduction, based on the social division of labor –growing plants (agriculture) and domestic animals (cattle raising). This is a revolution in the relations between society and nature did not only reduce the human dependence on the environment, but also increased the productivity of labor and allowed creating products of agriculture and animal husbandry to share with other communities. Consequently, it became the source of origin of the market, which quickly evolved, giving rise to the category of commodities, money, prices, supply and demand.

Social division further developed. Large groups of people specialized in the division of labor - the production of tools, consumer products; they exchanged the products of their labor with the farmers and cattle raisers. Another group of people specialized in building - the

construction of palaces, temples, pyramids, residential complexes, and fortifications. The third group specialized in the field of operation of the market - there are emerged exchange rates, the money-changers. The fourth group - on administration of society and its protection; thus the state emerged with its apparatus and the army. The fifth group gave themselves to science, religion, and art; thus the sphere of spiritual reproduction emerged. As a result, about five thousand years ago there emerged the first generation of local civilizations based on a system of social division of labor.

At the same time it developed a professional division of labor, specialization in certain sectors or types of labor. Those busy in them reached perfection and a high level of labor productivity, engaged in the process of creating a common complex product of labor.

It should be noted two features of social and professional division of labor. First, it is both the process of formation of the noosphere, the development of scientific knowledge and its application in practice. Second, it is the growth of wealth of society and the progress of civilization.

Productive Labor

Among political economists for centuries there is a dispute about what kind of labor is considered productive. Classical and Marxist political economy considered productive labor only that creates commodities and paid services directly serving the production and circulation of commodities (transport services, communications, etc.). Only such labor was considered a source of national income. Labor in these industries and areas considered productive, the workers engaged in it created national income, and engaged in other areas of activities were busy with unproductive labor, consuming the national income.

The founder of the political economy of civilizations A. Storch considered useful any labor that brings benefit to society, including the labor of people engaged in the production of internal benefits (elements of civilization) - in the areas of public health, education, science, culture, religion, internal and external security. One and a half century ago his position was rejected political economist, but in the postwar decades it found recognition in the form of a generally applicable system of national accounts (SNA) to determine the gross domestic product (GDP) and gross national income (GNI) in all types of activities, including those which, according to the classification of A. Storch, produce internal benefits.

But this does not mean that any labor is productive. First, it may be useless labor for fun or to create useless products of labor needed for no one. Second, the labor can be dangerous to society.

The Law of Rise in Labor Productivity

The general economic law of the development of society and the productivity progress of civilization is the law of rise in labor productivity under the influence of two main factors: improving workers' qualification, their knowledge and skills, the use of more modern productive and effective instruments of labor and technologies. For level measurement, ratio and dynamics of social labor productivity it is now used an indicator, where the numerator is the volume of gross domestic product (at purchasing power parity, in comparable prices), and the denominator - the number of workers engaged in economy. For the measurement of labor productivity in industries the numerator is the volume of value added, and in the denominator - the average annual number of workers employed in the industry. The data on the level, ratio and dynamics of

social labor in the world and by civilizations are given in Table. 6.1. The following conclusions can be drawn from the table.

1. Labor productivity in the world for a century has grown in 4.8 times, and in the second half of the century when there was no world, it grew 1.53 times faster than in the first half of the century. However, by different civilizations and the leading powers it grew unevenly. The highest rates of growth were achieved in Japan (17.7 times, mainly in the second half of the century – 8.8 times), China (7 times, in the second half of the century - in 7.8 times), in the Middle East and North Africa (12.3 times - mainly due to oil). The lowest growth rates in labor productivity are in the African civilization (2.3 times per century).

2. The rise in labor productivity is nota regularity. Thus, in the middle of the 1stmillennium A.D. as a result of the collapse of the ancient civilization labor productivity fell, especially in Western Europe. In the first half of the 20^{th} century there was a drop in labor productivity in China and India. In the 1990s, the labor productivity of the Eurasian civilization (former USSR) fell by 35%, in Russia - by 45%.

TABLE 6.1. Labor productivity in the 20th century

	1900	1950	% of 1900	1970	1990	2000	% of the world	% of 1950	% of 1900
World	3.9	6.9	177	12.1	16.8	18.7	100	271	47
USA	17.0	35.3	208	49.6	69.5	73.1	391	207	430
Western Europe	9.9	14.5	146	22.8	46.7	53.9	288	372	…
Eastern Europe	5.3	12.2	230	…	30.6	33.6	180	225	634
Japan	3.1	6.2	200	27.6	53.7	54.9	284	885	1771
Australia	14.9	23.1	165	35.4	51.4	58.8	314	255	420
China	1.0	0.9	90	1.1	3.1	7.0	37	778	100
India	1.7	1.6	94	2.0	3.4	5.9	32	347	369
USSR	4.1	9.9	…	…	24.2	26.6	142	210	463
Including Russia	5.2	10.7	…	…	26.8	27.2	82	…	…
Latin America	3.8	8.4	228	12.3	17.1	15.4	82	…	…
Middle East, North Africa	1.7	5.0	19.4	13.4	19.8	20.9	112	418	1229
Sub-Saharan Africa	2.0	3.0	150	3.7	4.3	4.6	25	153	230
Coefficient of polarization	17.0	39.2	231	451	19.2	15.9	15.9	54	94

Source: World Economy. Global Tendencies for 100 Years. M.: Ekonomist, 2003. P. 539-541.

The regularity is acceleration of the rates of the labor productivity growth in the upward phases of civilizational cycles and a fall in the crisis phases. So, in the world the labor productivity growth rates declined from 31% in 1950. Even more sharp fluctuations are observed by the phases of local civilizations cycles.

It can be expected that with the transition to an up wave of the seventh civilizational and sixth Kondratieff cycles in the 2020-2030s the rates of labor productivity growth will significantly increase. This is necessary to overcome the civilizational crisis.

3. It is observed a substantial gap in labor productivity between the vanguard and lagging countries and civilizations. The polarization coefficient (the gap between the highest and lowest of the data in the table) increased from 17 times in 1900 to 45.1 times in 1970 (between the US and China). But then it began to decrease to 15.9 times in 2000 (between the United States and sub-Saharan Africa). It can be expected that as a result of achievement of the measures for eradication of poverty and hunger in the world adopted at the Summit of Sustainable Development in September 2015 the gap will further reduce. The transition to the world order based on dialogue and partnership of civilizations will promote it.

6.2. Wages

Major Social Contradictions of Capitalism

Profits can be increased in three ways. 1. To save on the cost of the equipment and materials used, while improving the production technology, but the quality of the goods suffer. 2. To raise the price for goods, but here the constraints are competitors and consumer demand. 3. One can save on capital, cut wages absolutely or relatively, compared with the growth of labor productivity. The history of capitalism is filled with constant battles between capital and labor, their representatives - trade unions and business associations, the mediator in these battles is the state. The interests of capital are obviously closer to it, and in the massive battles lose all and the socio-political stability of the state may be undermined.

The level of wages at some jobs has its objective basis - the cost of reproduction of labor force. It is not only necessary to restore the ability to work food, clothing, housing, transport,

etc., but also the need to spend money on education, maintenance of family, meeting the social and cultural needs. And as the labor productivity grows, the living standards and GDP per capita, the needs of wage earners (these are not only workers but also technicians, engineers, employees, etc.) increase, and this should be taken account of.

Does the law of the relative and absolute impoverishment operate? K. Marx proved the law of the relative and absolute impoverishment: with the growth of the productive forces it falls a share of wage workers in the newly created value; moreover, it develops a process of the absolute impoverishment, an absolute reduction in the level and quality of life of the proletariat that makes it a revolutionary force: the proletarians have nothing to lose but their chains.

That the law of the absolute impoverishment does not work, it is easy to prove statistically and empirically. In times of crises and rising unemployment, the situation of workers and their families usually deteriorates. It is a repeatedly proven fact. Nevertheless, the general trend is the increase in the quantity and improvement of the quality of goods and services consumed by the workers and their families, thus increasing the layer of workers' democracy, having a standard of living the same as the petty bourgeoisie, the lower layers of the middle class. With a scientific and technological progress it changes the structure of wage labor: it grows a share of highly skilled workers, programmers, technicians, opening the most complicated technical systems that require high-level qualifications.

Another thing - the law of impoverishment. Indeed, for centuries the law of the widening gap in incomes of the workers and the capitalists, the concentration of super profits in the hands of a small percentage of the population - the millionaires and billionaires. It is convincingly proved by French economist T. Piketty in the book "Capital in the 21st Century".

The state is trying to mitigate the injustice of the capitalist mode of income distribution using a progressive scale of personal income tax. But in recent decades, this progressivity reduces; it is not introduced at all in Russia. In addition, the owners of capital have dozens of ways to "optimize taxation", transferring capital to offshore zones, etc. This is another proof that the capital at the final stage hinders the development of social reproduction.

Other Types of Labor Income

Income of goods and services producers in the market-capitalist economy is not limited to wages. They also include income of peasants and farmers, small entrepreneurs and merchants directly involved in the production, government officials, lawyers, civil servants, officers, artists, writers, etc. Moreover, the proportion of people receiving such labor income, increases with time, and the social structure of society becomes more complex and varied.

Small entrepreneurs learned to make profit; they grow in the medium and large capitalists, and sometimes in monopolists. But usually they do not have a clear distinction between wages and profits, they are ready to sacrifice the latter, and even to give part of their wages in the hope to survive in the competition and then be in the markets.

Small businesses are millions, and in some countries - the tens of millions, they form the basis of the middle class and social and political stability. They have something to lose; they are unwilling to go to the street to participate in revolutionary actions unless the government brings them into a state to do so.

Therefore, the employment policy of J. Keynes and social policy in Germany, Sweden,

Austria and other European countries is aimed at supporting and protecting the middle class. And they mainly managed to do so in the post-war decades. However, at the beginning of the 21st century the lessons of Roosevelt, Keynes, and Erhard were forgotten. The International Monetary Fund and the European Union began to pursue a policy of saving and reducing public debt, cutting jobs for the middle class and young people. Such policy is ultimately doomed to failure, it brings the end of the life cycle of the oligarchic-financial capitalism and its replacement by a more socially fair and therefore more efficient and stable system.

Differentiation in the Distribution of Income

The proportions of the GDP distribution and standard of living of the population can be judged by GDP per capita, civilizations and leading countries vary (Tab. 6.2). Differences are even greater in the level of wages. The tabulated data suggest the following conclusions of political-economic nature.

1. Consumption Fund (private and public) has almost doubled for 13 years, its share in GDP increased from 76 to 78% due to the growth of the share of government consumption from 16 to 18%. In the high-income countries the share of the consumption fund remained in the world average level (77 and 79%), it significantly decreased in middle-income countries (from 73 to 69%), it increased from 86 to 88%, in low-income countries, where the household consumption makes the bulk part.

The increase of the share of the consumption fund in high-income countries during the global financial crisis limits the abilities of innovative renewal of fixed capital and the use of the achievements of the STR-21.

2. By groups of countries it has developed different proportions in the level and dynamics of the consumption fund. In high-income countries, the consumption level of households is high and tends to increase (60 and 61%), as well as the government consumption (77 and 79%).A small proportion of profits is directed to the accumulation; it threatens with a fall in competitiveness. The inertia of the "consumer society" manifests in it. At the same time in the group of the middle income countries the share of household consumption fell from 59 to 55%, including in China from 47 to 34% that indicates the inadequate development of domestic demand. In low-income countries the share of consumption is extremely high, which limits the size of the accumulation.

TABLE 6.2. Distribution of GDP and level of life

	GD Distribution, %				**GDP per capita, thous. US dollars**			
	Потребление домашних хозяйств		Government Consumption		2000	2013	2013 in %	
	2000	2013	2000	2013			of the world	of 2000
World	66	60	16	18	5.44	10.63	100	195
Countries with:								
High-income	60	61	17	18	21.18	37.56	100	172
Middle-Income	59	55	14	14	1.17	4.56	353	390
Low-Income	78	77	10	14	0.26	0.61	43	235
USA	66	68	14	15	36.4	52.98	49.6	145
Germany	57	58	19	19	23.72	46.44	46.45	130
Japan	57	61	17	21	37.3	38.62	36.3	104
China	47	34	18	14	0.95	6.99	66	736
India	64	59	13	11	0.45	1.46	14	324

Russia	46	52	15	20	1.77	14.49	141	819
Brazil	64	63	19	71	3.74	11.71	110	313
Ethiopia	62	72	23	8	0.12	0.50	50	417
Coefficient of polarization								
Countries with high/low income	77	19	170	129	82.9	58.8	58.8	0.73
USA/Ethiopia	92	94	120	238	303.8	99.2	99.2	0.35

Source: 2015 World Development Indicators. Washington: The World Bank, 2015. Table 1.1, 4.2, 4.8.

3. GDP per capita at current prices is almost doubled; income grew at a faster pace in countries with middle- (3.9 times) and low-income (2.4 times), that led to some reduction in coefficient of polarization (from 84 to 59 %) by high- and low income countries. At the same time it should be noted that the level of per capita GDP in high-income countries (3.5 times higher than the world average) indicates the overconsumption and is carried out largely at the expense of redistribution of income in favor of the countries of the "golden billion"; GDP per capita in low-income countries is 8.3 times lower than the average world speaks about injustice in the distribution of global GDP.

It is necessary to develop science-based optimal models of consumption, differentiated by civilizations, countries and climate zones.

6.3. Forms and Funds of Public Consumption

Sophistication of the Area of Distribution

The social structure of the society of the 21st century is fundamentally different from existing a century ago during the formulation of the Marxist political economy. With a life expectancy, it increases the share of the population who ended their careers and lives mostly on pensions. The tendency will continue in the 21st century, especially in countries with high incomes and high median age. The duration of life is supported by increasing spending on public health and medical services, primarily through the state. All this has generated in the 21st century a new form of distribution - public consumption funds, the new functions of the social state.

Pension Funds

Almost all countries have set up state (and partly non-state) pension funds designed to accumulate annual contributions of workers and employers to provide pensions after retirement age. With the growth in the living standard it grows the size of pensions. The activities of such funds are designed for decades. However, with the fall of the share of the working, increase in life expectancy and the share of pensioners the countries one after another fall into the "pension trap": the accumulated sizes of the pension funds turn out to be inadequate to pay the required amount and adequate pension levels. To get out of this trap, they raise the retirement age, low pension payments to working pensioners, etc. But it causes social protests that are dangerous for the statespersons and political parties. This issue yet expects its effective solution, especially in terms of depopulation and the aging of population.

Medical Funds

Another urgent problem is the rapid growth of public spending on health. In many countries there remain health insurance funds, all kinds of services, especially for pensioners and the disabled, and children are provided free of charge at their expense. It should be noted that the amount of the expenses for are growing rapidly and in 2013 reached 10% of GDP (in high-

income countries 12%, with the middle-income - 5.8%, with the low-income - 5.5%), of which 60% are government spending (in the Eurozone- 76%, 47% in the United States, in low-income countries - 40%, with the middle-income - 53%, in Russia - 48%).

In per capita terms, these expenses averaged around the world 1,048 US dollars a year (at PPP – 1,240 US dollars), in high-income countries – 4,687 a year, with the middle - 237 (530) US dollars, including Russia 957 (1,523) US dollars, with low - 36 (92) US dollars - 130 times less than in the countries of the "golden billion", in the USA– 9,146 US dollarsl[1]. Such high level of spending in the countries of the "golden billion" and especially in the United States is determined by the monopoly in this area.

The political economy of civilizations must justify and recommend to the UNO, WHO and the governments a system of organization of public health care predominantly on the non-market conditions in the provision of large-scale assistance to the low-income countries, where 850 million people live.

Education Funds

It is not less important the problem of the organization of education as a non-market sector economy, the element of civilization so that to overcome the wave of functional illiteracy and professional incompetence due to a mismatch of the existing education system to the changed conditions of life and work in the society of the 21st century. The new generation turns out to be unprepared for these conditions that becomes a brake on the overcoming the civilizational crisis. The total amount of expenses of the state on education amounted to 4.8% of GDP (5.7% in high-income countries), but no data are published for many countries. It is necessary not only to significantly increase spending on education, but also to give them a public character, and most importantly - to change their content, improve the fundamentality, creativity and continuity of education, implement the synthesis of scientific, educational and information revolutions. (This will be discussed in Chapter 12.)

This is especially important for solving the problem of youth employment, which assumes the character of a social catastrophe. While among the Russians aged 15 and older from 1991 to 2013 the employment fell from 62 to 60%, then for the young people aged from 15 to 24 years, it dropped from 52 to 41% - by 11%[2]. This problem must be solved as by creating tens of millions of new jobs for young people, and through the organization of additional education, especially for the millions of migrants.

Control questions and tasks

1. What is the role of labor in the origin of man and civilization?

2. What kind of labor can be regarded as productive? Is the labor ofdoctor, teacher, scientist, artist, civil servant productive?

3. How does the nature of labor and an incentive to laborchange in a modern society? Show it by examples.

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[1]2015 World Development Indicators. Washington: The World Bank, 2015. Table 2.13.

[2]Ibid. Table 2.4.

4. What are the main factors for improving the productivity of labor and show a connection between them.

5. In what forms does it take place the division of productive income in the market-capitalist and non-market sectors of economy?

6. What determines the level of wages? Does the law of the absolute and relative impoverishment of the working class operate in modern society?

7. What forms of earned income other than wages exist? What are their features?

8. How to get out of "pension trap" in prospect?

9. How to ensure the most effective public health system in the society? Is it necessary to expand or reduce the sphere of the market in education?

10. How, in your opinion, is it necessary to adjust the education system to ensure the youth employment?

CHAPTER 7. PROPERTY, CAPITALPROFIT

Exploring the basic categories of political economy, we have considered commodities, money and prices as the main categories of market economy, labor, wages and incomes of the population as a primary source of social reproduction. Let us now turn to the triad of categories: property, capital and profit. Although the category of property is inherent in all civilizations, for the market-capitalist economy it serves in the form of capital bringing profit, the 'Golden Calf' - an object of worship, deification in the capitalist economy.

7.1. The Many Faces of Property

Property, Exchange, Distribution

The main categories of economic relations with any civilization, any economic system is the triad: property-exchange-distribution. *Property* expresses relations in appropriation of resources of reproduction and its products, *exchange* is a ratio of the mutual exchange of products of labor under conditions of social division of labor, *distribution* is a form of distribution of the results of reproduction between its participants, including the state, which states and implements claims with respect to a part of the manufactured product (in-kind or cash, in the form of taxes, fees, royalties, etc.). In this triad the key role belongs to the property. It is the owner appropriates the main results of reproduction. The legal embodiment of property is the right to own, use and dispose of the objects of property, the economic content - appropriation of its results, the surplus product (profit, interest, rent, etc.).

The Many Faces of Property

The system of property relations arose with civilization, in the process of division of labor and transition to reproduction. Prior to this the primitive community asserted their rights to the territory, was engaged in hunting, fishing, bee-keeping, but it left the area as soon as the resources were exhausted or a stronger rival appeared. Herds of deer, shoals of fish, beehives can hardly be regarded as someone else's property.

With the transition to farming and cattle husbandry the objects of appropriation clearly delineated - cultivated fields and products grown on them, built irrigation systems, domestic animals herds, and manufactured tools. Labor was put in them, which should be reimbursed to ensure the conditions of life of the community, to continue the process of reproduction.

Initially, there were two forms of ownership: community to cultivated fields and jointly-grown products; personal of the patriarchal family to housing, tools, and domestic animals. With the transition to the early class civilization and the emergence of the first generation of local civilizations the number of property types multiplied. The slave-owning property extended not only to the means of production of products, but also to slaves; the State property of the Pharaohs; temple property of the worship communities; private property of free peasants, craftsmen, merchants, etc.

The determinative form of property for the early class and ancient world civilizations was slave-owning, including the state. With the transition to the medieval civilization it became the determinative the multi-tiered feudal ownership - the emperor, his vassals. The main object of property was land with the peasants living on it.

Since the early industrial civilization, rapid emergence and spread of market-capitalist economy, it was formed a new axial couple of property implementing such economic system - the capitalists in different forms (the manufactory, industrial, banking, commercial capital - with partial preservation of feudal property) and peasants, craftsmen, etc.

Multi-Order Economy

The economy has always been multi-order. From age to age, from one world civilization to another the structure of the orders changed, all based on some form of ownership, and their relationship.

The market-capitalist economy in its full development is characterized by the following orders:

✓ *capitalist* on the basis of private property and the exploitation of wage labor. It is diverse, medium and large enterprises on the basis of individual property or in the form of share capital; over time monopoly capital will grow on its basis;

✓ *petty commodity* with peasants, craftsmen, petty merchants, and free entrepreneurs;

✓ *state* - state-owned and operated under its direct control; in the middle of the 20th century it merged with monopoly capital into state-monopoly capital;

✓ in the epoch of globalization, the *transnational order* gains the increasing development, which is in the jurisdiction of the states where there are registered the headquarters of transnational companies (TNCs) and transnational banks (TNB);

✓ *collective* in the form of cooperatives, socially-owned enterprises and cooperative associations;

✓ *natural* order of labor peasant farms and households connected with the market, but producing basic products for their own consumption.

In the socialist countries, the state-socialist order prevailed, it was complemented by cooperative order entwined with it, but it always remained petty commodity order and to a lesser extent the natural order of family labor households.

Usually, the political economists focus on the differences and confrontation of orders. In fact, they complement each other in a diverse palette of producers and consumers of millions of different products of labor, market and non-market sectors of economy, strengthening its viability and meeting the whole range of needs of society. Another thing is that in different conditions and at different development stages of reproduction in different civilizations the ratio of orders changes, but the multi-order remains.

7.2. Capital and Its Forms

The Essence of Capital

Capital is not just accumulated or used amount of money in cash, material or stock form. The essence of the capital as the first economic category of market-capitalist economy and the mystery of its origin was revealed by K. Marx in Volume I of "Capital". Marx gave a concise formula of capital nature, its mission: *capital is self-expanding value*, the mechanism of self-expansion of capital. The main result of its operation is surplus value - it does not arise because the products are sold or purchased not at value. Even if the capitalist buys and sells all

commodities at value, it still gets and appropriates added value. The key to this mystery is that the main commodity which the capitalist acquires - the work force of wage worker – is able to produce more value than the cost of reproduction of work force. With labor productivity growth the share of unpaid surplus labor of wage workers rises.

The Initial Accumulation of Capital

Chapter 24 of Volume One of "Capital" volume shows the history of original accumulation of capital, which lets you create enterprises for normal reproduction. In different countries, this process took place in various forms, and in Russia, along with the traditional forms of capital accumulation in the 18^{th} – 19^{th} centuries it repeated in the NEP period in the 1920s and the 1990s as a result of privatization.

Fictitious Capital

Along with the industrial and banking capital there is fictitious capital - securities representing the real cost of capital and have an independent circulation on the stock markets. This is caused by the accumulation of funds of small and medium-sized owners for the implementation of large investment projects. On the stock markets there are traded shares of companies that have passed the Listing procedure and introduced for quotations at the stock exchange. There is a speculation between the "bulls", playing for rising in quotations for securities, and "bears", dealing for their fall.

However, in recent decades, fictitious capital is increasingly different from the real and turning into the virtual, and operations on the stock and commodity markets take a purely speculative nature, which has no connection with the real movement of capital and commodities. Periodically, crises occur, leading to the bankruptcy of many "bubbles" and a loss of real resources for many companies and investors. In 2008-2009, the ratio of market capitalization of the companies to the world GDP for the year fell in 2 times - from 121 to 59%, and then began to rise again. It is estimated that the total value of the securities in the world 3 times higher than the world GDP. This is another manifestation of parasitism and decay of the capitalist market-economic system at the final stage of its life cycle.

7.3. Profit: the Goal of the Market-Capitalist Economy

The Purpose of Profit

The profit itself is inhomogeneous and performs various functions. *First*, a part of the profit reimburses entrepreneurial income - the result of own labor on the choice of the market niche, the organization of production and a sale of goods, etc. After all, its work force has also value, high in case of a successful business and innovative initiatives. *Second*, any production of commodities requires a periodic innovative renewal of innovation, and a part of profits is directed to it (capitalization of a part of profits, return to reproduction). In the periods of the assimilation of new generations of technology and technological orders a capitalized share of profit increases, it is required by strict laws of competition. *Third*, a part of the profits goes to the payment of taxes, duties and fees to the state, especially in progressive taxation. After all, the capitalist uses work force for the reproduction of which there are spent public funds (public health, insurance, etc.), pays contributions to the pension funds, the health insurance fund, etc. *Fourth*, the borrowed capital is required for periodic innovative renovation of capital, seasonal accumulation of stocks, etc. But it needs to be timely returned and pay interest. It also requires

expenses. Finally, *fifth*, a part of the profit goes to the payment of compensation to the owners of capital, distribution among shareholders, etc. The state can act as such owner, exercising its right of ownership. Consequently, profit performs different functions both in individual and social reproduction.

7.4. Forms of Profit

Trade Profit

The source of the first and longest-existing form of profit is trade profit which arose with the market economy and international trade. Caravans of merchants or ships with goods sent off on long journeys, including by the great trade routes. It was also one of the forms of dialogue among civilizations. The source of trade profit was not the surplus value in the capitalist sense but rent. States collected taxes on commodities being brought in and sought to maintain and develop trade routes.

In the late Middle Ages, in the Renaissance, the international trade took on different forms and flourished, especially in the great trade routes. Trade companies were established and even international trade associations such as the Hanseatic League. Trade performed the function of original accumulation of capital, and acquired some of the characteristics of capitalist enterprises – with wage workers and created surplus value. Merchants entered into agreements with craft workshops to sell their products.

Trade profit in the market-capitalist economy became one of the forms to apply capital to make a profit through the exploitation of wage labor. The great geographical discoveries and the formation of the world market gave trade a worldwide character. In the late-industrial society the super-monopolization of trade gave a more parasitic nature to trade profit. Its increasingly larger part was directed to advertising, a hard selling to the consumer, and creating demand.

Manufactory Profit

The change-over to the manufactory stage of capitalism in the 16^{th}-18^{th} centuries led to the emergence and spread of profit as a result of exploitation of wage labor employed at the manufactory. The center of formation of profit shifted to Western Europe - the Netherlands, France, Germany, and Great Britain.

Industrial Profit

The industrial revolution of the late 18^{th}- the first quarter of the 19^{th} century gave an impetus to the formation and spread of industrial capital in Western Europe. There were built plants and factories based on machine production, wage labor, a growing mass of profit for the accumulation of capital and payments to the state were regularly used. The industrial profit became an important source of fixed capital accumulation and economic growth.

Bank Profit

The needs of the expanded reproduction demanded growing volumes of capital accumulation and gave an impetus to the development of various forms of bank capital, the proceeds of which were formed due to interest that brought banking profits. The bank's network concentrated a part of the profit and used it for further expansion of lending. Here the source of income was wage labor of bank employees, and trade in money capital (according to the formula $D \rightarrow D'$, where $D' = D + \Delta D$).

Financial Profit

Since the end of the 19th century it began the process of merging of industrial and banking capital and formation of financial capital and financial profit. The merger of industrial and banking capital led to the use of financial profit of stock-market games. At the end of the 20th century it emerged a network of transnational banks and international financial centers. At the top of the pyramid are the World Bank and the International Monetary Fund, promoting the interests of the countries of the "golden billion".

Virtual Profit

Since the last quarter of the 20th century financial capitalism begins to mutate in the parasitic phase of the virtual capital with virtual profit, growth of parasitism. This occurred on the globalization of capital, formation of TNC, the world's financial centers. Capital developed into a "bubble economy", which rapidly swelled, absorbing a growing share of the profits from the sphere of reproduction and accumulation.

7.5. The State and Profit

The profit of capitalist economy becomes a major source of income for states - along with taxes on incomes of population. Therefore, the state protects the carries of profits, and creates conditions for the development of entrepreneurial activity. On the other hand, the state apparatus seeks to get the largest possible share of the profits to meet its needs. To this is added the corrupt practices of officials, which prevents the development of entrepreneurial activity and become a constraint on the economic growth. The avaricious corruptionists cut a branch while sitting on it.

Control questions and tasks

1. When did the property arise and what does the role it plays in the system of economic relations?

2. Tell the main development stages of the forms of property in the change of the world civilizations.

3. Is the multi-order economy certain? What orders exist in the modern market-capitalist economy and how do they interact with each other?

4. What is the essence of capital as a self-expanding value? What are the sources of such self-expansion?

5. Tell the main forms of capital and show the interaction between them.

6. What is the difference between surplus value and profit? How does it form the average profit?

7. In what forms does profit appear in today's economy?

8. Tell the main factors of the rate of profit,

CHAPTER 8. RENT, QUASI-RENT, ANTI-RENT

Making a profit necessary for the payment of interest, dividends and taxes and improving the reproduction is a normal condition for the functioning of a market-capitalist economy. But the cherished dream and passion of the capitalists, for which they run innovative risks, violation of laws, and sometimes crimes is to achieve super profits appearing in different forms - rent, quasi-rent and anti-rent. These categories require special political economy research.

8.1. Natural Rent: the mechanism of creation and distribution

Specifics of Natural Rent

Social reproduction is based on the interaction of labor, capital and natural resources, which are extremely varied and ensure productivity of labor and profitability of economic management through reasons not depending on human labor. The variety and scarcity of natural resources are responsible for the appearance of a special economic category - *rent* appropriated by the owners of natural resources and at the same time, leveling the conditions of competition for entrepreneurs exploiting natural resources different in quality. This required determining the prices for the products of agriculture and extractive industries at a level that ensures cost recovery and obtaining an average profit for entrepreneurs and the possibility of paying absolute and differential rent to the owners of natural resources that are different in quality (often the owner is the state). In this case, the price includes rent and takes the following form:

$P_T = (C + V) + P \times K + R$, where

(C + V) – cost recovery (the transferred value of means of production spent and wages);

P x K – average return on invested capital;

R – rent, payments for use of natural resources.

Depending on the types of resources used the following rent is distinguished - ground (agricultural), mining (in the mining industry - oil, gas, coal, ore mining), forest (in the form of stumpage), water (for using fresh water sources).

Ground Rent

The fundamentals of the theory of ground rent were developed by Ricardo. A significant contribution to its development was made by Lenin in connection with the development of the policy of land nationalization. I dealt with this issue in the second half of the 1950s in preparation for the Candidate's dissertation on the theory of nationalization of land and the monographs on this topic[1]. With the nationalization of the land there is no need to pay the absolute rent but differential rent, based on the difference in fertility and location of the land remains and is paid to the state. It aligns the conditions of competition for entrepreneurs.

Mining Rent

Marx recognized the existence of rent in the mining industry, but he did not study into it specifically. This issue was the subject of a number of works in the USSR in the 1950-1960s– A.I. Bozhedomov on oil rent, V.K. Shkatovon forest rent. Rent in the mining industry was the

[1] *Yakovets Yu.V.* Theory and Practice of Socialization of the Land. M., 1957.

subject of my doctoral dissertation and the monograph "Pricing Methodology in the Mining Industry"[1]. Particular attention was paid to the problem of differential mining rent. It was identified a differential rent of the first kind development conditions and the quality of mineral deposits developed. Along with the differential rent of the second kind led to the use of more efficient technical means and technologies of exploration, extraction and transportation of mineral fuels and raw materials, it is introduced the concept of differential rent of the third kind by interchangeability – additional income in industries that produce more efficient interchangeable types of fuel (such as oil and gas industry compared to coal). It is demonstrated that in the conditions of nationalization of the depths absolute rent is liquidated in the domestic market, pricing is based on the average industry level of socially necessary labor inputs, and self-financing conditions for enterprises that develop deposits of varying quality and location, are aligned with the help of the system of computational schemes. Thus, a "false social value" as the content of rent disappears and is provided a lower level of prices for the products of the mining industry in the country.

However, as a result of market reforms in Russia and other CIS countries and the privatization of enterprises the mining rent returned, the level of prices for products of the extractive industries has grown.

World Mining Rent

Beyond national boundaries, mining rent acquires new features in the world economy. Its significance increases in the conditions of energy crises of the mid-1970s, 2015-2016 due to the abrupt changes in world prices for mineral fuels and raw materials, especially oil.

In the conditions of globalization and the growing energy-ecological crisis the issue of the world natural rent, its evaluation, equitable distribution and regulation of world prices for basic energy resources becomes more urgent. The abrupt change of the world prices for energy resources and other minerals undermines stability of economy, leads to a redistribution of income between countries and civilizations and requires science-based solutions.

According to the World Bank, the contribution of the natural rent to GDP was 4.9% in 2013 (including oil rent -3.2%, gas - 0.4%, coal - 0.3%, ore mining - 0.8 %). However, in many countries, these figures are higher. For example, in Saudi Arabia a share of rent was 46.2% of GDP, Iran -39.4%, Azerbaijan - 36.4%, Turkmenistan - 31.4%, Kazakhstan - 29.7%, Uzbekistan - 20.1%, and Russia - 18%[2]. The sharp fall in world prices for oil and other mineral resources in 2015-2016 resulted in huge losses to the economy of these countries. At the same time the importers of energy resources received huge super profits.

Sharp fluctuations in prices and levels of rent become a destabilizing factor in the world and national economy and require international regulation on the scientifically grounded base.

Tourism Rent

One of varieties of world rent is tourist. It has a dual character, due to the different climatic conditions (resorts, recreational facilities) and cultural and historical heritage of countries. With the development of international tourism in the postwar decades, income from tourism services

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[1] *Yakovets Yu.V.* Pricing Methodology in the Mining Industry.

[2] 2015 World Development Indicators. Washington: The World Bank, 2015. Table 3.15.

exports (which significant part is a tourist rent) increased and reached in 2013 $ 1.381 billion US dollars - 6.1% of world exports, but then began to fall. In some countries, tourism has become the leading sector of economy. However, political relations, terrorism, economic sanctions limit the growth of tourism, hence the volume of tourism rent.

8.2. The Many Faces of Quasi-Rent

Super profit arises not only in industries based on the exploitation of natural resources, but also in all areas of market activity and acquires diverse nature. I call these kinds ofsuperprofit quasi-rent, which is just as diverse. Let us dwell on several types of quasi-rent.

Technological Quasi-Rent

A widespread form of quasi-rent is an innovative super profit - technological quasi-rent, which are received and appropriated by entrepreneurs who have mastered new high-tech equipment and technology (after recovery of increased costs in the period of development). Technological quasi-rent is akin to the natural differential rent of the second kind arising from the application of technological improvements in agriculture to increase the productivity of plots of land, and has in its basis the intellectual quasi-rent of owners of intellectual property for an invention, the innovative application of which brings super profit. This monopoly prevents competitors from using the invention without having to purchase a license and thus extends the period of validity of such intellectual quasi-rent. Technological quasi-rent acts as an incentive and engine of innovation and technological progress, encourages entrepreneurs to take risks of basic innovations, opening the way for new generations of technology and technological orders.

The rhythm of change of prevailing generations of technology (about ten-year) and technological orders (about half a century) limits the time of receiving the technological quasi-rent by phases of distribution and maturity of the technological cycle. Then a new generation becomes prevailing and ceases to bring super profit, and in the last phases of its life cycle can bring differentially scientific and technical loss. Its partial improvement becomes pseudo-innovation in such period, not bringing technological quasi-rent, and often loss-making.

Technological quasi-rent operates also on a global scale, in the world technology market. The vanguard countries and TNC appropriate world technological quasi-rent when exporting innovative products. TNC, the countries of the "golden billion" that monopolized this market seek to consolidate its monopoly position to derive greater super profit. This is most pronounced in the world intellectual property market. The share of high-income countries in patent applications for inventions in 2013 was 53%, but they appropriated 97% of income from intellectual property and occupied 62% in high-tech exports. The positive balance of foreign trade in intellectual property amounted to $ 28 billion US dollars for these countries[1].

Financial Quasi-Rent

Another widespread type of quasi-rent is super profit in the financial sector. It is obtained by national and transnational banks, insurance companies, commodity and stock exchanges, as well as "financial pyramid builders." Financial quasi-rent received especially significant size in the last period of the market-capitalist economy, in the stage of its decay and the increasing parasitism, swollen virtual capital. This kind of quasi-rent is even more ghostly, virtual, and

[1]2015 World Development Indicators. Washington: The World Bank, 2015. Table 5.13.

chaotic than a technological quasi-rent.

With the development of globalization according to the neoliberal mode the "bubble" of financial quasi-rent reaches enormous scale. The scale of the world financial quasi-rent appropriated by high-income countries can be judged by the data of the World Bank: in 2013 their exports of financial and insurance services amounted to $ 330 billion US dollars while imports $ 257 billion US dollars; surplus of $ 73 billion US dollars - 22% of exports[1].

Trade Quasi-Rent

Trade quasi-rent, as well as tourism, is mixed. It includes a part of the differential rent by location of commodity producers, but the bulk of it – super profit in the provision of intermediary services between producers and consumers of commodities. With the expansion of the scales of markets and formation of the global market this type of activity grows, its share in the GDP increases and in the mass of appropriated profits and superp rofits, while e-commerce development counteract this tendency and limits innovative quasi-rent in this field of activity.

8.3. Anti-Rent

The evidence of parasitism and decay of the late industrial society is the rapid growth of anti-rent in various forms: ecological, corruption, and infringing.

Ecological Anti-Rent

The concept of ecological anti-rent I introduced in 2002 in the report at the Summit on Sustainable Development in Johannesburg. This is super profit arising as a result of predatory use of natural resources and super-parasitic environmental pollution, i.e. environmental evaluation of damage caused by economic activity to nature. I offered to withdraw the anti-rent using penalty payments. A practical step in this direction was made by me already in the 1970s, when proposed to introduce penalty payments for excessive losses of minerals in the mining industry. Such payments were introduced by the Council of Ministers of the USSR and survived until the end of the 1990s.

The environmental payment can be of two types. Ecological anti-rent of the first kind is determined by excessive(against the technological level achieved) losses of natural resources – selective mining of the best areas of deposits, low oil recovery factor, conservation of marginal wells, predatory deforestation, putting up buildings on fertile lands, etc. - in the pursuit of super profit. Ecological rent of the second kind is expressed in excessive environmental pollution - greenhouse gas emissions, industrial and household waste (pollution of rivers, forest processing, technogenic emissions, etc.).

It was proposed to introduce a peculiar kind of price of these pollutions on the basis of the cost of damage caused to the environment, the cost of reproduction of the lost mineral resources, clearing of environment from pollution so that to withdraw ecological anti-rent, concentrate payments in global and national environmental facilities and use the funds for the needs of rational nature management and integrated environmental improvement.

The implementation of these efforts becomes particularly relevant in connection with the

[1] Ibid. Table 4.6, 4.7.

Agenda 2030: Sustainable Development Goals shaped at the Summit on Sustainable Development, RIO + 20, and measures for the transition to "green economy" and reduction of harmful emissions into the atmosphere at the Paris Climate Change Conference in December 2015. For the implementation of these measures one will need to develop a methodology for the economic evaluation of damage to natural resources and the environment; to determine the sizes of payments for environmental damage (ecological payments); to organize the planetary system to monitor the sources of environmental pollution and extraction standards and ecological processing of mineral resources, land and water resources; to establish an order of payments distribution to national and global environmental facilities and the use of these resources on projects of regional environmental management and integrated environmental enhancement. Such work requires efforts and expenses to develop and implement such a mechanism. But failing this the calls for the ecological imperative, the spread of "green economy", environmental enhancement will remain good wishes the road to the ecological hell is paved with.

Corrupt Anti-Rent

Corrupt anti-rent is a super income, which is received by government officials as bribes for the performance of their functions. This kind of anti-rent exists since the state emerged, one day developing, another day dying away. There are also observed cyclical fluctuations: corruption grows in the period of decline and degradation of civilization and falls in the expansion phase of civilizational cycle.

Attempts have always been made to eradicate it, but almost never achieved success. There are only two successful examples: in Carthage under Hannibal and in postwar Singapore, when the punishment for bribes was fast. Over the last quarter of the century in Russia and other former Soviet countries, it has bloomed largely. Attempts to calm it by raising the wages of civil servants and the adoption of anti-corruption laws, maintaining constant supervision over the affairs of officials have not given tangible results.

Corruption is particularly considerably developed in low-income countries, where it is one of the factors of growth of the gap between the poor majority and a narrow circle of officials and their environment. There remains a need of tough national and international legislation to combat corruption and the inevitable punishment of corrupt officials and embezzlers of public funds, withdrawal of corrupt anti-rent in favor of the state budget with confiscation of property.

Infringing Anti-Rent

It has gained a widespread currency super profit that is generated from the sale of infringing goods - medicines, foodstuffs, light industry products, equipment, and materials. This kind of activity causes damage to both consumers and bona fide manufacturers of goods, compliance with the rules of intellectual property protection. The customs authorities, food and trade supervision authorities, business circles, consumer societies fight against counterfeiting, but it does not give tangible results.

It is necessary to increase the responsibility of states and their authorized bodies for the observance of the established rules for the protection of consumers' interests, to ensure the withdrawal of infringing anti-rent and its use to combat the violation of the requirements for the quality of goods and services.

Control questions and tasks

1. In what forms do the rent relationships act in the market-capitalist economy? Draw a classification scheme of types of rent, quasi-rent and anti-rent.

2. What types of ground rent did Marx study? Have they survived in the modern economy?

3. Give the characteristic features of the mining rent and explain how it is implemented under current conditions.

4. What is quasi-rent? How does it differ from the natural rent?

5. What is the role of technological quasi-rent in the development and improvement of efficiency of the capitalist economy?

6. Tell about the mechanism of formation of financial and trade quasi-rents.

7. What is the danger of ecological and other anti-rent and how to limit it?

8. Is it possible to overcome the corruption and ecological anti-rent, what should be done to do so?

CHAPTER 9. POPULATION AND ECONOMY

Civilization and economy as a component are created by people and exist for them. Changes that occur in the rate of growth and population structure of the country, the local civilization and the world will ultimately determine the dynamics and proportions of reproduction, changes in the whole system of civilizational relations. Therefore, political economy is closely linked to demography as a population science.

9.1. Interinfluence of Population and Economy

The Dependence of Economy on Population

The basic proportions and the pace of macroeconomic dynamics and the global economy are directly dependent on population dynamics. The volume of production of goods and services depends on the total number of population that makes a demand for the products of labor, as well as on the share of the working-age population in it. The growth rate of economy depends on the increase in the number of employed and productivity of their labor, which is determined by the skill level of workers and the improvement of the technologies used. The processes of depopulation or overpopulation tell negatively on macroeconomic indicators.

The economy, in turn, has the opposite effect on the population. The efficiency of economy underlies the level and quality of life of population, and its health. Economic crises, especially in changing the long-term civilizational cycles, have negative impact on the performance indicators and health of population. On the contrary, in times of revival and recovery the population growth rates increase. The increase in the gap between wealth and poverty has a negative impact.

The population growth rates vary in different civilizations influenced by civilizational peculiarities. Thus, in the African, Indian, Muslim civilizations there are high population growth rates, its average age is lower. In the Western European, Eastern European, Eurasian, Japanese, Chinese civilization it is observed the opposite picture. All this should be taken into account in political economy.

9.2. Regularities and Tendencies of Demographic Dynamics

The Rate of Population Growth

The general regularity to the growth of population is observed throughout the period of development of civilizations. However, population growth rates are differentiated both by individual periods (in accordance with the civilizational-demographic cycles), and in civilizations and countries (Tab. 9.1).

The growth rate of the world population increased from 0.15% in the 1000-1500 (in the period of the medieval civilization) and 0.27% in the 1500-1820 (in the period of the early industrial civilization) from 0.9% in 1870-1913, reached a record for the entire history level 1.93% in 1950-1973. Then it began, according to S.P. Kapitsa, the demographic transition, the growth rates, according to the medium variant of the UN projection, will fall to 1.2% in 2015-2050.

This tendency weakens the demographic basis for the economic growth in the long term, which is aggravated by another tendency - the growth in life expectancy and aging of population,

an increase in the proportion of people in retirement and extreme old age. As a result, the traditional population pyramid will turn into a demographic mushroom in the long term in some countries with a sharp increase in the proportion of the elderly population (Fig. 9.1).

Taking into account the rising cost of reproduction of the labor force and an increase in the share of social expenditures in GDP, this means that the socio-demographic factor becomes a constraint for the economic growth in the long term, especially in countries that are in a state of depopulation.

TABLE 9.1. **Annual average growth rates of population, %**

	1000-1500	**1500-1820**	**1820-1870**	**1870-1913**	**1913-1950**	**1950-1973**	**1973-2001**
World	0.15	0.27	0.40	0.80	0.93	1.93	1.62
Western Europe	0.16	0.26	0.69	0.77	0.42	0.71	0.32
Former USSR	8.17	0.97	0.98	1.33	0.38	1.44	0.54
USA	0.09	0.50	2.83	2.08	1.21	1.45	1.06
Latin America	0.09	0.07	1.25	1.63	1.96	2.73	1.96
China	0.14	0.41	-0.12	0.47	0.61	2.10	1.33
India	0.08	0.20	0.38	0.43	-0.45	2.11	2.05
Japan	0.14	0.22	0.21	0.95	1.32	1.14	0.55
Africa	0.07	0.16	0.40	0.75	1.64	2.32	2.69

Source: Maddison A. The World Economy Historical Statistics. Paris: OECD, 2003. P. 257.

TABLE 9.2. **A long-term tendency of the growth of world population**
a[1]— years; b[2]— % of world average

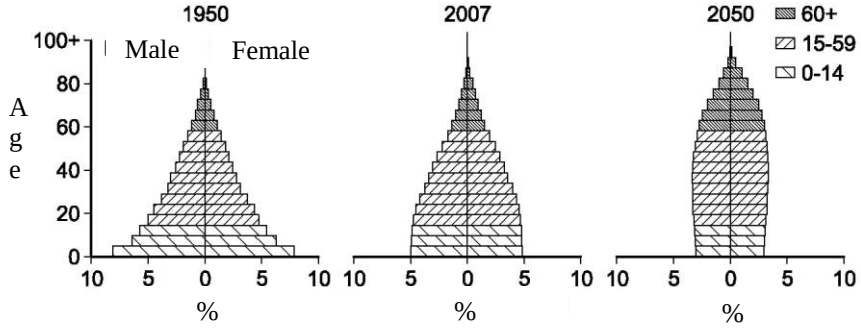
	1950-1955	**1965-1970**	**1985-1990**	**1995-2000**	**2015-2020**	**2030-2035**	**2045-2050**	**2045-2050 in % of 1950-1955**	**1995-2000 in % of 1950-1955**	**2045-2050 of % in 1995-2000**
World										
a[1]	46.6	56.2	62.9	64.6	68.9	72.2	75.1	161	139	116
b[2]	100	100	100	100	100	100	100	100	100	100
Western European										
Western Europe										
a	67.6	71.3	75.6	77.9	80.9	82.6	84.1	124	115	108
b	145	127	120	171	117	114	112	77	118	65
South Europe										
a	63.3	70.1	75.3	77.3	80.3	82.1	83.7	132	122	108
b	136	125	120	120	117	114	111	82	88	93
North Europe										
a	69.2	71.8	75.0	76.7	80.0	81.9	83.5	121	111	109
b	148	128	119	119	121	113	111	75	80	93
Eastern European										
Poland										
a	61.3	69.9	70.9	72.7	76.8	78.8	86.5	141	119	119
b	132	124	113	113	111	109	115	87	86	102

Continuation of Tab. 9.2

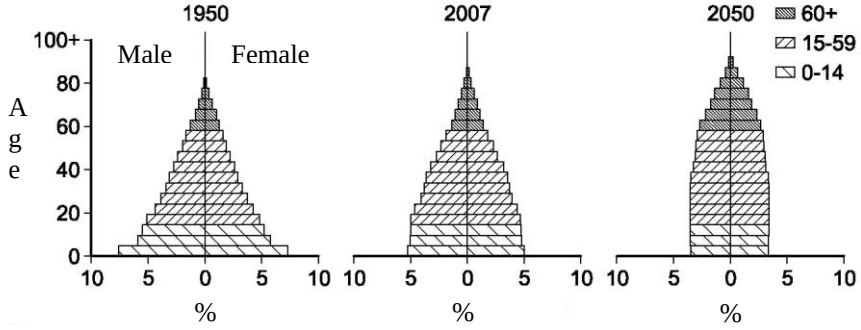
	1950-1955	**1965-1970**	**1985-1990**	**1995-2000**	**2015-2020**	**2030-2035**	**2045-2050**	**2045-2050 in**	**1995-2000**	**2045-2050 in**

									% of 1950-1955	in % of 1950-1955	% of 1995-2000
Eurasian											
Russia	a	64.5	70.1	70.2	66.0	66.9	70.1	72.9	113	102	110
	b	138	125	112	102	97	97	97	70	74	95
North American											
USA	a	68.8	70.5	76.4	76.7	79.4	81.1	82.7	120	111	108
	b	148	125	119	119	115	112	110	74	80	93
Latin American	a	51.4	58.8	66.7	70.2	75.0	77.6	79.5	55	137	113
	b	110	105	106	109	109	107	106	96	99	97
Japanese											
Japan	a	63.9	71.1	78.3	80.5	84.5	86.6	88.3	138	126	110
	b	137	127	124	125	123	120	118	86	91	94
Chinese											
China	a	40.8	59.6	67.1	60.0	83.4	55.2	86.9	213	147	145
	b	88	106	107	124	121	115	116	132	141	94
Indian											
India	a	38.7	48.0	57.2	61.5	69.5	72.7	75.9	196	159	123
	b	83	85	91	95	101	101	101	122	114	106
Buddhist											
Republic of Korea	a	47.6	57.6	69.8	74.6	80.5	82.8	84.4	178	157	113
	b	102	102	111	115	117	115	111	109	111	97
Vietnam	a	40.4	47.8	63.1	68.8	74.3	76.9	78.9	195	170	115
	b	87	86	100	107	108	107	105	121	123	98
Moslem											
North Africa	a	42.0	49.0	60.5	70.8	70.8	74.1	76.8	188	156	117
	b	90	87	96	103	103	103	102	113	112	101
Indonesia	a	37.5	46.0	60.1	71.0	71.0	74.2	76.9	205	173	118
	b	81	80	99	104	104	104	103	127	123	103
Oceanic											
Australia	a	69.6	70.9	75.9	78.5	82.1	83.6	85.0	122	113	108
New Zealand	b	149	126	121	122	119	116	113	76	82	93
African											
South Sahara	a	37.4	43.4	49.3	47.0	50.8	57.5	63.6	170	126	135
	b	80	77	79	73	74	80	85	106	91	116

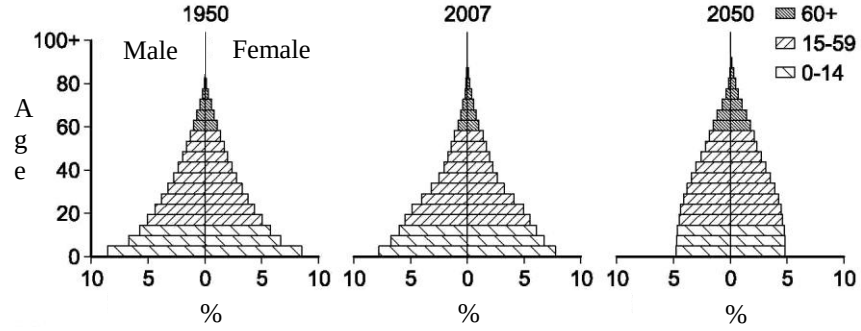
Source: World Population Prospect. The 2004 Revision. Vol. 1. N.Y.: U.N., 2005. P. 632-658.



Latin America

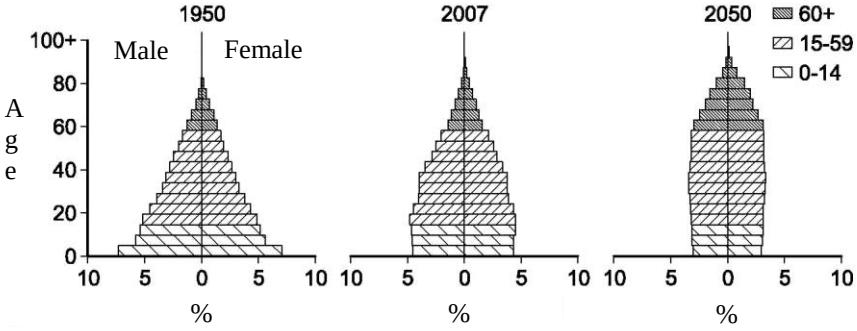


World

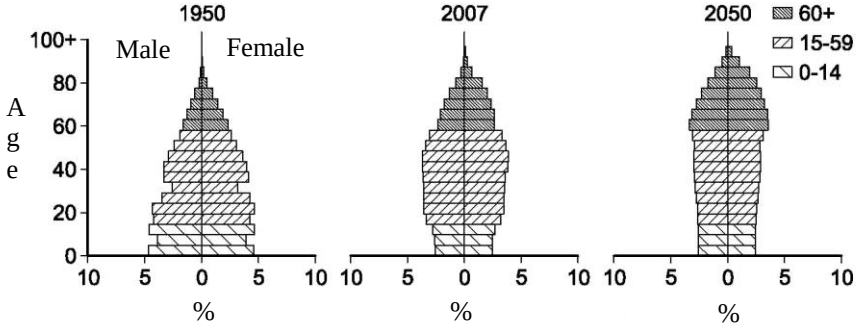


Africa

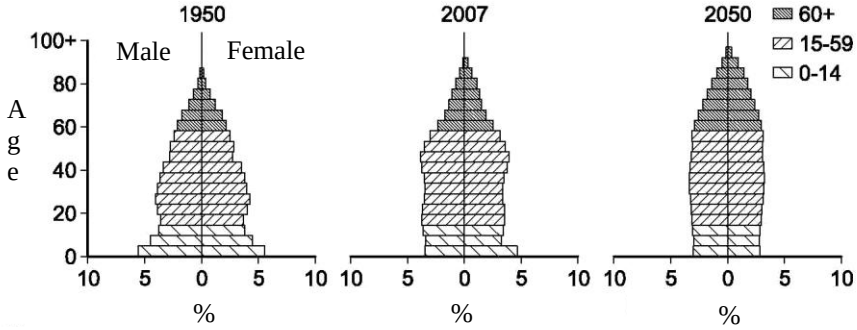
Fig. 9.1 **Socio-demographic structure of population**



Asia

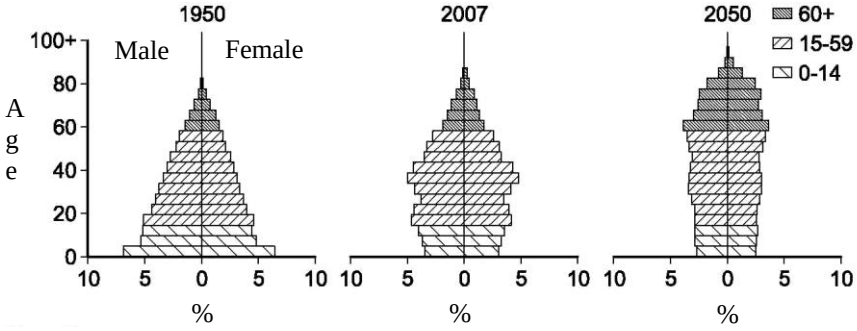


Europe

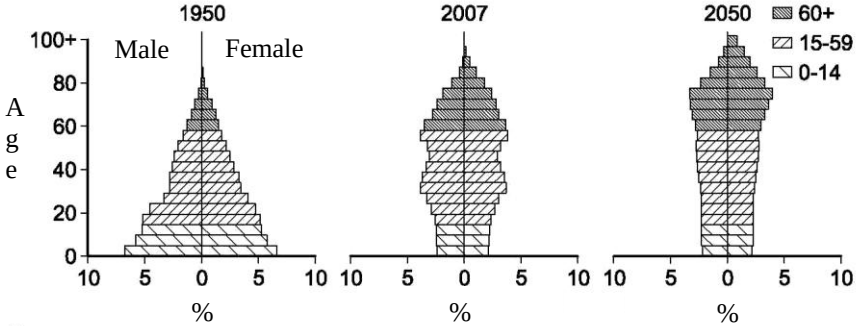


North America

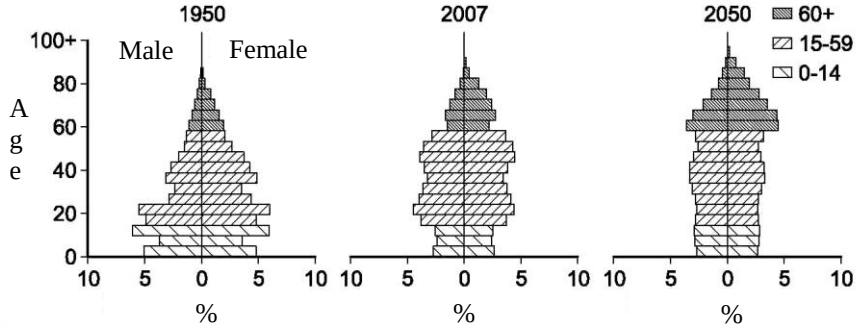
Continuation of Fig.9.1



China



Japan



Russian Federation

End of Fig.9.1

Migration Problems

A disturbing pattern is the increase in migration flows between countries and civilizations, which causes serious problems, including civilizational nature, in the host countries. It became apparent most clearly in 2015-2016 when an influx of migrants from the Middle East and North Africa flooded to Western Europe. In fact, the Western European civilization is being transformed into mixed. The elements of the clash of civilizations, including terrorism, develop not at the state borders between the Muslim and the Christian world, but within the Christian world. Policy of multiculturalism and opening of borders to free movement of people has collapsed under the onslaught of powerful migration flows - the modern version of the great migration of peoples. The reasons for this are high rates of population growth in Muslim and African countries, and low in Western and Eastern Europe, a sharp gap in the level and quality of life, US policy and its allies to impose by force their own ideals of development.

It is necessary anew global migration policy that takes into account the peculiarities of different civilizations and aimed at overcoming the depopulation, optimization of migration flows, the convergence of the level and quality of life in different civilizations.

9.3. Social Economy

The general trend of the civilizational development is to humanize economy and politics.

Humanization of Economy

The establishment of local civilizations in their slave-owning form took place in the conditions of expanding the area of forced slave labor at relatively greater freedom of community members, artisans and merchants. It was characteristic of the first two generations of local civilizations (3 thousand B.C. – the middle of 1st millennium B.C.). In the Middle Ages, the peasants work in their farms was more free, but combined with the forced labor in the feudal economy. A change to the manufactory, and then industrial capitalism was accompanied by a deterioration of working conditions and landlessness.

In the era of the industrial civilization, especially in the 20th century, the social elements in the economy strengthened and expressed in limiting the duration of the working day, improvement by a number of entrepreneurs of living conditions of workers. After the socialist revolutions under the pressure of the labor movement the capitalist economy was increasingly filled with social elements, especially after World War II (social market economy of Ludwig Erhard, "Swedish Socialism"). It grew unemployment payments, sizes of pensions, reduced working hours. However, in the event of crises, these mixed elements devalued greatly, especially in the beginning of the 20th century.

A Global Social Policy

In the postwar decades, the UN took active measures to regulate the global population policy. At the Conferences on Population in Cairo and Beijing in the period of a rapid growth of population (for the second half of the 20th century the world population grew by 2.4 times), there were elaborated recommendations on birth control, family planning, promotion of contraceptives, etc. were developed, the, etc. This policy was pursued actively in several countries and led to a reduction in the rate of population growth in many countries and in the world. China promoted the principle “one family – one child” that became the basis for the transition to the depopulation in the coming decades and it was replaced by the principle of "one family - two children."

However, by the end of the 20th century the demographic situation in the world changed. In a number of countries it began to spread depopulation, the aging of population goes fast. It is time to change the global demographic policy. But this is not reflected in the Sustainable Development Goals for the period up to 2030, adopted by the UN in September 2015, where it is still supported the principle of family planning. In the reports of Russian scientists on Sustainable Development it was put forward a proposal to prepare and hold an international UN conference on population, which would take into account changes in population trends and dynamics.

Strengthening of the Family Institution

The family not only performs crucial functions of reproduction of the population and labor

force. It is the main institution of civilization, the transfer of its genotype from generation to generation, sustainable development of economy and society. Strengthening the foundations of the family is the main concern of the world religions and their institutions. From the end of the 20th century in many countries it is observed a crisis of the family institution, undermining of its foundations. This is reflected in the rapid increase in premarital relations and single households, families without children; in weakening the reproductive function of the family, and development and support of same-sex marriage in some countries; in the increasing the number of orphans while they are parents alive.

Such manifestations of the decay of the family institution and the expansion were also observed in the decline of civilizations (in ancient Greece, Rome), and at the time of revolutions (in France and Russia).

Caring for the improvement and development of the institution of the family is the most important task of the state, religion and society, their partnership in overcoming the crisis of the family, in the transfer of the biological genotype of human and the genotype of civilizations from generation to generation.

9.4. Global Socio-Demographic Crisis and Strategy of Its Surmounting

Socio-demographic Crisis of the 21st Century

The socio-demographic crisis evolved from the end of the 20th century, based on the demographic transition that was formulated by S.P. Kapitsa is not less dangerous for the future of civilization, than the economic crisis, although it is not realized by any government and political leaders, 0nor the majority of scientists. It means a turn in the tendencies and structure of population which have established for millennia and threatens with the degeneration of the human race in the long-term. What are the reasons for such a menacing statement and a stern warning? To answer this question, let us analyze the dynamics and structure of the population for 150 years according to the latest United Nations population projections to 2100 (Table. 9.3).

It changes the general trend of population dynamics. From a millennium to millennium its number was growing. According to A. Maddison, the total number of the world's population increased from 230 million at the beginning of our era to 286 million in 1000, 438 million in 1500 and 6.149 billion in 2001. The general trend was the accelerated growth rates, which reached its peak in 1965 -1970s - 2.05% annual increase. (Although there were observed the periods of population reduction - for example, during the transition from ancient to medieval civilization, or in the period of the plague in the 13th century in Europe that swept off the third of the population). Since 1750 the annual growth rates of the world population were growing slowly. However, since the end of the 20th century the trend of falling growth rates prevailed and which in the beginning of the 22nd century can turn into a long-term tendency of depopulation, reduction of the number of Homo Sapiens species on the planet. Where will it lead to?

First, the average age of the world's population will increase from 23.2 years in 1960 to 26.6 years in 2000, 34.2 years - in 2013, 39.4 years - in 2050 (according to the medium variant of the UN projection). Depopulation involves a growing number of countries. This is due to the decline of the traditional family, the growth of same-sex marriages and single-parent families, especially in high-income countries. It falls a share of the population in the age of innovation activity, increases the proportion of the elderly population and the demographic burden on the

working people. This means a growth of conservatism and a fall of innovation activity at a time when there is a growing need for radical innovations.

TABLE 9.3. **World Population**

A — mln. people; B — % of the world.

		1950	2000	2050	2100	2000 of 1950, %	1950 of 2000, %	2100 of 2050, %
World	A	2,526	6,115	9,551	1,054	242	156	114
	B	100	100	100	100	-	100	100
Europe	A	517.5	726.6	691.1	-	140	95	-
	B	21.7	11.9	7.6	-	58	61	-
America and Oceania including:	A	351.4	871.1	1177.7	-	248	135	-
	B	13.9	14.3	12.3	-	102	87	-
North America	A	171.5	310.7	448.5	-	181	144	-
	B	6.8	5.2	4.9	-	75	93	-
Latin America	A	167.3	521.2	729.2	-	312	140	-
	B	6.6	8.5	8.0	-	129	94	-
Oceania	A	12.6	31.2	51.3	-	-	106	-
	B	0.5	0.5	0.54	-	-	154	-
Asia and Africa including:	A	1,690.2	3,517.8	7,230.0	-	208	200	-
	B	66.9	57.5	75.7	-	86	132	-
Asia	A	1,462.9	2,698.3	5,231.5	-	181	-	-
	B	55.5	44.1	1,998.5	-	86	-	-
Africa	A	227.3	819.5	20.9	-	361	249	-
	B	9.8	13.4	-	-	149	156	-

Source: World Population Prospects. The 2013 Revision. N.Y., 2013.

Second, it changes the population structure, it falls a share, and in many countries also the number of the able-bodied population. This means that such an important factor of economic growth, as the increase in the volume of employment, is no longer valid. This tendency is common in high-income countries, as well as in Russia. Overcoming labor shortage through immigration, as has happened in Western Europe, gives rise to new civilizational contradictions. In 2013, the inflow of migrants in high-income countries amounted to 16,941 thousand people, the number of migrants in these countries reached 144.7 million people in 2010 - more than 11% of the population of these countries, in Germany - 13%, in the United States - 14 %. Added to this is the increasing flow of refugees and illegal migrants from countries affected by armed conflicts and terrorism. It starts a great migration of peoples, usually characteristic of periods of historical faults change of civilizational cycles, and it takes place in non-traditional, diverse forms and exacerbates socio-political and civilizational contradictions in the host countries.

Third, it has reached critical limits the gap in conditions of reproduction, the standard of living of population, spending for healthcare. The gap in GDP per capita between the countries with high income ("golden billion" 1.306 million people in 2013) and low and ("beggar billion" 849 million people) in 2013 reached 20.9 times by the PPP; in the level of per capita healthcare spending per capita - 120 and 55 times respectively. The number of unemployed in the world in 2013 reached 200 million people, including young people - 70 million people. This is an enormous explosive force. Hundreds of millions of people live in beggary, millions of people die every day from hunger, and tens of millions are lapped in luxury. All this indicates the injustice of social structure of society, which, with its vast resources, are unable to provide a decent life for all its members.

Fourth, it changes the civilizational structure of the world population. The share of European civilization tends to fall from 21.7% in 1950 to 10.5% in 2010 and in the future,

according to the UN medium variant projection, will fall to 7.6% in 2050. At the same time, the share of Asian and African civilizations increases from 64.5% in 1950 to 73.9% in 2000 and 79% in 2050 (including African –from 9 and 13.4% to 21.81%). In 2015, the influx of illegal migrants in Western and Eastern Europe reached catastrophic proportions, putting into question the social and integrative achievements of the European Union. Civilizations of the West become less homogeneous, the proportion of the native population falls. Their share implacably declines in the world's population. However, they are concentrated with them economic and military power, political influence, tend to impose on the majority of the world's population own rules to keep its hegemony. This cannot but cause a corresponding reaction from other civilizations.

Fifth, the demographic policy worked out by the UN in the post-war decades is aimed at limiting population growth, family planning, freedom of movement and does not meet the conditions of life and reproduction, and at times exacerbates socio-demographic crisis, especially in countries affected by depopulation. It is still not developed a strategy to overcome depopulation, and migration management. The UN Secretariat confines itself to a periodic review of demographic projections, with some estimates of depopulation of a number of middle-income countries by 2100 seems low, and the estimates for the USA and Western Europe - overestimated. In the UN Sustainable Development Goals to 2015 there were dominated the demographic indicators, some of them met, but that has not stopped deepening of socio-demographic crisis. It requires a new system of goals for socio-demographic dynamics and indicators of their achievement that is adequate to the challengers of the 21st century.

The Growth of Depopulation

For nearly 40 millennia of its existence, the Homo Sapiens species grew in the number of species and spread across the planet, filling the habitat - oecumene. Population growth was now fast, then slow, and there were periods of demographic crises when population size declined - for example, during the transition from the Mesolithic to the Neolithic ten thousand years ago or from the ancient to the medieval civilization in the middle of the 1st millennium of our era. According to A. Maddison, the world population increased from 230 million at the beginning of our era to 268 million by 1000, 438 million people in 1500, and then began to grow at an increasing rate - up to 1,842 million in 1820, 2,524 million in 1950, and in the second half of the 20th century it broke all records, by an increase of 2.4 times in half a century and reached 6,149 million in 2001; average annual growth rate reached 1.93% in the 1950-1973.

However, since the third quarter of the 20th century as noted S.P. Kapitsa it began a demographic turn: a steady decline in population growth - from 2.04% in 1965-1971 to 1.34% in 1995-2000, 1.14% in 2005-2010 and 0.38% (according to the medium variant of the UN projection) in 2045-2050. More and more countries are affected by depopulation. This causes a number of negative demographic tendencies:

✓ a reduction of the share, and then the size of population of working age and the volume of employment - the most important factor of economic growth;

✓ growth of the average age of the population - from 22.1 in 1970 to 29.1 in 2010 and 38.4y.o. according to the 2050 projection (medium variant), the reduction of the share of the population in the age of innovation activity, increasing demographic burden on the working people;

✓ a mix of overpopulation, excess labor force in low-income countries with the growing

labor shortages in high-income countries, which leads to an increase in the flow of legal and illegal migrants and exacerbation of inter-ethnic and intercivilizational conflicts in various countries.

The latest variant of the UN demographic projection to 2100 retains this trend and envisages a decline in population growth by the end of the century, followed by the transition to a global depopulation and resulting from it (and from the increase in life expectancy) an increase in the average age to 41.3 years. Consequently, depopulation and the aging of the population become the main threats to the future of humanity, which could lead in the longer term to its degeneration and disappearance from the face of the planet.

Is this an inevitable demographic catastrophe? The study of demographic dynamics shows that the decline of civilization, a change of civilizational cycles was accompanied many times by a demographic crisis, depopulation. So it was at the decline of the Greek civilization, Roman civilization, in the deep crisis phases of the Chinese and Indian civilizations. The current civilizational crisis is largely determined by the decline of the industrial civilization, increasing uncertainty in the future of families, as well as the proliferation of one-child, childless and same-sex families.

These tendencies are exacerbated by the orientation of the global demographic policy, proclaimed by the United Nations in the postwar decades, on the fertility reduction, family planning. China consistently pursued a policy of "one family - one child", which led to a drop in the rate of population growth, and from the 2040s will lead to depopulation and a shortage of manpower. The UN experts predict the same fate to most countries by the end of the 21st century.

However, there are grounds to doubt the correctness of such position, in the inevitability of depopulation. First, from the 2020s it will begin a process of accelerated formation of foundations of humanistically-noospheric civilization. It will increase the employment, reduce the unemployment among young people, it will accelerate the growth of living standards in low-income countries. This will create favorable conditions for the rise in births, natural need of young parents to have more than one child. Second, the sexual revolution rising in transitional times, has its limits. The formation of an integral socio-cultural system, the transition, according to P. Sorokin, from negative to positive moral and religious polarization will create more favorable motives of young people for family life and a child birth. Third, it is necessary to change the demographic policy of the United Nations and national states, to develop a new, socio-demographic policy aimed at the rejection of "family planning", to increase the child birth rates. The yearbook “World Development Indicators” of the World Bank in the data for sustainable development goals it is introduced an indicator of the share of people aged 15-49 using contraception: it grew from 58% in 1990 to 63% in 2013 (in China - from 83 to 88%), and it is considered to be the achievement of the Millennium Development Goals. The experience of Russia that from the beginning of the 21st century pursues the demographic policy of fertility support shows that in this delicate matter the governmental "soft" regulation can bring results. In China, there is a transition to the model of "one family - two children", and it also will give a result.

The transition to a model of a moderate demographic growth under the convergence of population growth rates in different countries and civilizations should be one of the key areas of socio-demographic UN policy and nation-states. Increased life expectancy and the aging of population set an objective to involve older people in full productive work, including on the

basis of the support of family labor households and cooperation

The Migration Wave

One of the factors strengthening the socio-political and economic instability in the dynamics of civilizations and states has become an unregulated growth of international migration - both official and illegal. Particularly rapidly this flow grows in recent years in the Mediterranean region in connection with the growth of political contradictions and the failure of attempts of the West and NATO forcibly and with the help of "color revolutions" to replace the objectionable ruling regimes, undermining stability in the region. Data on the extent and distribution of migration flows are presented in Table 9.4.

First, the rates of migration are increasing, to the official are added not less impressive flows of illegal migrants, refugees from conflict-ridden areas and displaced persons. One can talk about a new great migration of peoples, but in a scattered form. Such tendencies are usually observed in times of civilizational crises, a change of super-long civilizational cycles. One can expect that with the overcoming the crisis, formation of an integral civilization and reducing the gap between rich and poor countries, the extent of cross-border movement of people will be reduced, and in 2030s will reach an optimum level.

TABLE 9.4. Migration Flows Between Civilizations

	Number of Migrants, thous.			Accumulated Migration, thous. people			Migration Money Transfers, 2013,bln. US dollars	
	2000	2012	% of population	2000	2010	% of population	Received	Sent
High-income countries	-	16,941	1.3	-	144,654	12.6	135,695	334,450
USA	-	5,000	1.6	-	42,813	13.6	6,695	53,590
Germany	-	550	0.7	-	10,758	13.3	13,792	18,625
Japan	-	350	0.3	-	2,176	1.7	2,364	2,872
Australia	-	750	3.2	-	4,711	20.4	2,465	7,345
Middle and low-income countries	-	-16,991	-0.3	-	68,662	1.2	324,529	61,641
China	-	-1,500	-1.0	-	698	0.1	36,619	4,443
India	-	-2,294	-0.2	-	5436	0.4	69,970	6,413
Russia	-	1,100	0.8	-	12 770	8.6	6,751	37,217
Vietnam	-	-200	-0.2	-	69	0.1	8,600	
Latin America and the Caribbean	-	-3,017	-6.5	-	6143	1.0	60,729	4,794
Middle East and North Africa	-	-1,632	-0.5	-	11 957	3.5	26,015	8,792
Subsaharan Africa	-	-1,545	0.2	-	17 638	1.9	4,372	3,794
World	-	-	-	-	213,316	-	460,224	326,090

Source: 2015 World Development Indicators. Washington: The World Bank, 2015. Tables 1.1, 4.2, 6.13; 2003 World Development Indicators. Washington: The World Bank, 2003. Tables 6.13.

Second, the main vector of migration is the movement of people from the poor South to the rich North, from low- and middle-income countries (in 2013, 17 million immigrants) to high-income countries (16.9 million immigrants). In the latter, the level of accumulated immigration in 2010 reached 147.4 million people - 12.6% of the population (in Australia - 20.4%, USA - 13.6%, Germany - 13.3%, Russia - 8.6%). The main source of migration flows are Latin American (3,017 thousand in 2012), Indian (2,294 thousand), the Middle East and North Africa

(1,632 thousand) and the African civilization (1,542 thousand) - regions with high birth rates, low income and excess manpower. The least affected by migration flows are Japanese and Chinese civilizations. Military conflicts in North Africa, the Middle East, and Ukraine increase the flow of legal and illegal migrants and refugees.

Third, the main reason for the increased flow of migrants is a gap in the level of per capita income - in 2013 among high-income countries and countries with middle and low income - 9.6 times (4.8 times by PPP). The flow of remittances from migrant workers to low- and middle-income countries (in 2013 - $ 324.5 billion US dollars) mainly from high-income countries (the remittance from them is $ 334.4 billion US dollars) slightly reduces the gap, but cannot decide the problem.

Fourth, neither the UN nor the regional organizations have not still developed a long-term strategy in the field of migration, struggle with its consequences, but do not eliminate the causes. The long-term goal of optimizing the migration should be based on the following factors and institutions.

1. To return to the border closure, bans on cross-border movements of people are unreal, it is contrary to the fundamental principles of social and economic policies and tendencies of globalization. Therefore, it is not about the ban and strengthening the restrictions on movement of people, but about the optimization of migration flows, where the optimal level is different for different countries and civilizations and the different phases of civilizational cycles.

2. The strategy should be aimed at reducing the main causes of excessive migration in three ways:

✓ rise in the living standards and reducing unemployment (especially among young people) in the donor countries, a significant reduction in the gap between the "golden" and "beggar" billions. An important reserve there may be support for family households in agriculture and agro-processing;

✓ reduction in labor shortages in high-income countries, especially in the services sector, through the development of e-commerce, involvement of the elderly in the production, etc.;

✓ improvement of socio-political stability, the cessation of the armed conflicts, the return of refugees and displaced persons.

3. Much attention should be paid to ordering migration flows – making long-range balance of labor resources and manpower by countries and civilizations, early identification of shortage and surplus labor, relocation assistance on the basis of contracts concluded, observance of the rights of immigrants and their fair remuneration, etc.

Public Health Promotion

Strengthening of public health, the fight against dangerous diseases and epidemics, increasing the availability and quality of medical services are the most important indicators of social progress of civilizations. Among the 17 goals for sustainable development for the period after 2015 it includes goal 3 "Ensure healthy lives and promote well-being for all, at all ages," including the following indicators to 2030:

✓ reduce maternal mortality ratio in the world to less than70 per 100,000 births;

✓ end preventable deaths of newborns and children under 5 years of age;

✓ end the epidemics of AIDS, tuberculosis, malaria and ensure combating hepatitis B;

✓ reduce by one third the death rate from oncology diseases;

✓ strength prevention and treatment of narcotic drug abuse and harmful use of alcohol;

✓ ensure universal access to sexual and reproductive health-care services, including for family planning purposes;

✓ achieve universal health and high-quality essential health-care services;

✓ substantially reduce the number of deaths and illnesses from hazardous chemicals, and air, water and soil pollution and contamination;

✓ substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries, and others.

For all the importance of achieving these figures it should be noted that some of them are impossible to achieve by 2030 - primarily because there are no financial resources in many countries of Asia, Africa and Latin America, as well as human resources to achieve them, and the gap in the spending for public healthcare in countries with high and low income has reached enormous proportions (Table. 9.5).

At the current level of maternal mortality (210 per 100,000 births), the gap between countries with high and middle and low income was 13.5 times (with low-income - 29.5 times); for tuberculosis the world average 126, the gap between high-income countries and middle- and low-income - 2.8 times (with low income - 11 times) between India and the USA - 57 times. The number of doctors per 1,000 people in high-income countries is 2.6 times more than in middle- and low-income, and in Germany 17.5 times more than in sub-Saharan Africa. The gap in the number of hospital beds per 1,000 people between high-income countries and middle- and low-income is 2.5 times, and between Germany and India - 19.6 times. The striking gap in health spending per capita: between countries with high and middle and low income is 19.2 times (11.3 times by PPP), and between the USA and India - 150 times (42.5 times by PPP).

TABLE 9.5. Indicators of Health and Health Care Development

	Maternal mortality per 100,000 births, 2013	Tuberculosis diseases per 100,000 people, 2013	Number of doctors per 1,000 people, 2007-2013	Number of hospital beds per 1,000 people, 2007-2013	Public Healthcare Spending, per capita 2013 US dollars	
					US dollars	By PPP
World	210	126	1.3	-	1,048	1,220
High-income countries	17	22	3.1	5.7	4,687	5,047
USA	28	3	2.5	2.9	9,146	9,146
Germany	7	6	3.9	8.2	5,006	4,812
Japan	9	9	2.3	13.7	3,966	3,741
Australia	6	6	3.3	3.9	5,927	3,997

Middle- and low-income countries	230	62	1.2	2.3	244	489
China	32	70	1.9	3.8	367	646
India	190	171	0.7	0.7	61	215
Russia	24	69	4.3	…	957	1,523
Vietnam	49	144	1.2	2.0	111	308
Latin America and the Caribbean	87	46	2.0	2.0	746	1,099
Middle East and North Africa	78	40	1.4	0.8	260	745
Sub-Saharan Africa	510	24	0.2	…	101	19.9

Source: 2015 World Development Indicators, Washington: The World Bank, 2015. Tables 1.3, 2.15.

It is clear that such a significant polarization in health care and medical services for 15 years cannot be overcome. It is useful to form the World Health Facility under the auspices of WHO (following the example of the Global Environment Facility) with large means, sufficient to provide significant and sustainable assistance to the lagging countries. It is necessary to create dedicated multi-language Internet portals to provide advice and training of medical personnel. It should be ensured the economic growth and education at faster pace in the lagging countries to enable them to reach the current level of public healthcare and medical services, to reduce many times the lagging from high-income countries.

However, it should be taken into account that expenses for pharmaceutical products and medical services in developed countries are overstated due to the excessive commercialization of healthcare, imposition of expensive services and medicines to the population by pharmaceutical companies. This is one of the signs of the decay of late industrial civilization. The healthcare system and medical services should be funded by national and international public consumption funds and be used for the convergence of the level of consumption of health services by different social classes, countries and civilizations. The implementation of the proposed measures will also contribute to the achievement of the Millennium Goal 5 Sustainable Development for the period after 2015 - "Achieve gender equality and empower all women and girls."

Control questions and tasks

1. What is the relationship between population and economy? Draw a diagram that characterizes these relationships.

2. How do the current demographic tendencies influence the economic growth? Do you agree with the statement that the demographic factor is becoming its major constraint? Argue your answer.

3. What are the causes and what are the features of a modern socio-demographic crisis? Tell the main areas of the strategy for its overcoming.

4. What caused the depopulation of the population in a number of countries and civilizations? Is depopulation the inevitable future of mankind?

5. What caused the modern family crisis? What are the possibilities and ways to overcome it? What role can play a new generation?

6. What is the cause of international migration and what are the factors of its sharp aggravation in recent years? What can and should the international community do to address this problem?

7. What caused a sharp break in the public health care spending by countries and civilizations?

8. What should the United Nations do to overcome the global socio-demographic crisis?

CHAPTER 10. NATURAL-ECOLOGICAL MODES OF PRODUCTION AND CONSUMPTION

The economic component of the genotype of civilization operates and develops under the increasing noospheric regularities and tendencies– both in its positive and negative manifestation. The economic aspects of the formation of the noosphere also become the subject to be examined by political economy of civilizations. A key to the understanding of these issues is given by the doctrine of the noosphere by V.I. Vernadsky, developed by N.N. Moiseev and the modern Russian noospheric school.

10.1. Economic Aspects of the Noosphere Formation

Noosphere and Civilization

The noosphere and civilization originated and developed at the same time consistently, according to the law of co-evolution of society and nature discovered by N.N. Moiseev and received further support in the process of overcoming the economic and natural-ecological contradictions. Man, Homo species and Homo Sapiens species is the top of nature and its evolution. Man step by step, began to penetrate into the most secret corners of nature, and not only to look closely to its regularities and tendencies, but also to pave his own way in this co-evolution.

The Bronze Age civilizations did not only master half of the continents, but also learned how to build irrigation systems. It helped to develop husbandry and to create a building product that allowed construction of basilicas, temples, pyramids, maintain the state and the army. The first generation of local civilizations emerged.

At the next stage, in the industrial civilization, there was a scientific revolution that built a new system of applied and natural sciences, the world empires came about with the development of the system of economic relations, a new level of development of all components of civilization in their co-evolution with nature. However, negative manifestations of the noosphere arose as irrigation systems, deforestation.

A period of medieval civilization and the third generation of local civilizations began with a decline in population, degradation of the technological base after the fall of the Western Roman Empire. It was a historic zigzag in the co-evolution of society and nature. But already at the end of the 1st millennium A.D. it began the restoration of the noosphere; it intensified during the Renaissance. In the early industrial civilization of the 15th-17th centuries in the Age of Discovery creative (and destructive) activities of civilization spread to almost all.

The impact of the industrial society on nature reached its apogee in the 20th century in the period of industrial civilization, requiring scientific understanding and the formation of the doctrine of the noosphere of V.I. Vernadsky and N.N. Moiseev.

Positive and Negative Development Scenarios of the Noosphere

In scientific understanding of the problems of formation and development prospects of the noosphere it turned out that they have not only a positive constructive, but also negative, destructive scenario. The human mind has penetrated deep into the mysteries of nature, life, society, learned to work on many previously unknown processes, use them to its advantage,

walked in space and near-Earth space densely sown with spacecraft. But at the same time it is created a weapon of mass destruction, capable of destroying all life on the Earth, the ecological being destroyed, natural resources under depletion, natural and anthropogenic disasters multiply.

Humanity, at the beginning of the 21st century, has found itself before the fatal choice of alternative future scenario: either it will be a hard way to noospheric civilization, to the harmonious co-evolution of nature and society, the restoration of balance between them, the realization of the ecological imperative formulated by N.N. Moiseev, or it will be the path to the noospheric catastrophe, followed by a self-destruction not only of civilization, but also of all living things on the planet.

10.2. Natural Factor of Economic Growth: the Vector Change

The Natural Basis of the Progress of Civilizations

Natural productive forces, development of new natural resources during the millennium was one of the prime factors in the development of civilization, economic growth, increasing the forces of progress, the fruitfulness of labor. This was the difference of one historical eras from another: the Neolithic, the Bronze Age, the Iron Age, the use of wind and water energy in the Middle Ages, electricity, liquid and gaseous fuels – all these are milestones on the path of progress, increasing productivity and prosperity of peoples. Nature will infinitely pamper man, periodically opening its pantries one after another. While society plunders untalented and irresponsibly, cutting down and burning forests, disrupting soil fertility, extracting minerals with big losses, polluting the environment.

But by the end of the 20th century – beginning of the 21st century the vector of influence of natural factor on the economic growth changed dramatically. From a factor of economic growth and development of labor productivity a natural factor becomes its limiter. Instead of depleting oil and gas fields one has to look for and develop new ones - on the coastal shelves, in the Arctic zone, with high costs and ecological risks. To produce genetically modified foods instead of natural, to spend an increasing share of social labor and resources to address environmental challenges, to prevent consequences of natural and anthropogenic catastrophes. And with each decade the inhibitory effect of the natural factor will increase. A good mother nature turns into a stepmother, embittered by uncaring stepson - man.

These dangerous tendencies cause a growing concern with the UN. After the UN Stockholm Conference on the environmental situation there were established the United Nations Environmental Organization and the Global Environment Facility.

Economic Growth Constraint

In the 21st century a vector of interaction between nature and society is changing. From the engine of progress of civilizations and economic growth natural factor turns into a constraint. This is due to three tendencies:

✓ aggravation of scarcity of natural resources and depletion of non-renewable natural sources of energy and materials;

✓ a significant increase in volume and share of human and financial resources allocated for the protection and improvement of the natural environment;

✓ adverse climate changes, increasing the number of natural catastrophes and losses

caused by them.

The answer to these new challenges can be given on the basis of the formation of the noospheric natural-ecological mode of production and consumption, based on the principle of harmonious co-evolution of society and nature, and the effective use of scientific and technological factor to overcome the demographic and natural-ecological constraints. Unfortunately, in the development of the Strategy for global sustainable development and the UN Goals for sustainable development for the period up to 2030, the emphasis is on economic, social and ecological components of sustainable development and it is underestimated the role of scientific and technological, geopolitical and socio-cultural factors.

The Growing Scarcity of Natural Resources

Consumption of natural resources is growing rapidly, due to both population growth and wasteful use of natural resources and large losses in their use. Thus, for a quarter-century energy consumption has increased by more than 1.5 times, where fossil fuel makes more than 80% in the balance of consumption. However, recoverable oil reserves will be largely depleted in the middle of the 21st century as well as ores of a number of non-ferrous metals, later - reserves of natural gas. The development of new oil and gas fields in the Arctic and offshore is expensive and is associated with high environmental risks. It grows a shortage of arable land and fresh water, cuts down tropical forests in Africa and South America.

It is necessary to reverse the tendencies in the use of natural resources, to create an effective global system of efficient environmental management that includes the following elements. First, a sound estimate of the cost of reproduction of natural resources used based on the cadastre system to be updated on a regular basis. There are practically no gifts of nature left. Second, the transition to a resource-saving type of reproduction, focused on conservation of natural resources, taking into account the interests of future generations, reduction of losses during their production (increase oil recovery factor, utilization of associated petroleum gas and natural gas of marginal wells, waste-free processing of mineral raw materials, and so on). Third, a wide replacement of natural sources of energy and materials with renewable, non-polluting sources, more efficient use of solar, wind, thermal and hydroelectric energy. Fourth, narrowing the gap in the level of energy supply between countries with high and low income due to the increase of consumption in the poor countries and reducing the consumption in the rich. The experience of Germany and the United Kingdom shows that this is real. Fifth, given the overall sharpness of the energy crisis, it is appropriate to establish under the auspices of the UN the international energy organization, which could take upon itself the development and implementation of global energy strategy for energy security, validity and predictability of world prices for basic energy.

10.3. Economy of Ecology: Ecological Imperative

The Growing Ecological Threats

The increase in the world population in 2.9 times over the past 65 years, the growth of per capita consumption in this period several times led to the load on the environment that has reached the critical level, rising the environmental risks, catastrophes, has become one of the factors of adverse climate changes. Greenhouse gas emissions grow (CO_2 emissions for a quarter century increased more than in 1.5 times), there are formed the mountains of industrial and

household waste, increases pollution of water sources and the world ocean.

It evolves the process of global warming, the melting of ice in the Arctic and Antarctica, which makes it real a threat of the rising the sea level (which has already been not once in the past), the flooding of coastal cities, reducing the permafrost zone, which can result in the opening of huge reserves of hydrates and emission of methane into the atmosphere which is 20 times more dangerous than CO_2. It increases the number of floods, tsunamis, typhoons, forest fires, human casualties and material losses caused by them. The stockpile of nuclear weapons is enough to repeatedly destroy all life on the Earth and turn it into a lifeless planet, like Mars.

Ecological Imperative

The great Russian scientist N.N. Moiseev gave a comprehensive assessment of ecological threats and articulated an ecological imperative, requiring a radical change in attitude of society to nature, transition to the harmonious co-evolution on the noospheric principles. He proved the inevitability of the "nuclear winter" and the destruction of humanity as a result of a thermonuclear war. The answer to these challenges should become a global super-long program implementing the ecological imperative. The environmental objectives proclaimed by the United Nations in September 2015, will be just one of the steps in this direction. The Organization for Promoting Global Civilization proposed the centenary plan for a comprehensive improvement of the environment, which was approved by the 4th World Congress of global civilization "On the Path to the Noospheric Civilization" (Moscow, December 2013).

The Pitirim Sorokin - Nikolai Kondratieff International Institute (SKII) with a group of Russian scientists developed the concept of creating an integral system of forecasting, monitoring and response to emergencies and offered to engage a space-based surveillance and armed forces in this process. Another group of scientists prepared a draft dealing with the asteroid-comet hazard.

The growing ecological threat has also economic aspects. It takes shape a new branch of economics - ecological economics. This requires from the political economy fair criteria for determining the functions and place in the process of social reproduction. The first attempt in this direction was made by the Nobel laureate in economics W. Leontief through defining six types of environmental pollution. These ideas should be developed and continued by highlighting in the system of national accounts and input-output balances theecological sector. It will conform to the principles of political economy of civilizations, since the use of free goods is one of the elements of civilization.

Control questions and tasks

1. What is the impact of natural factor on the emergence and dynamics of civilization?

2. What is the place of the natural-ecological component in the genotype of civilization and how does it relate to the economic component? Show these relationships in the diagram.

3. How and why does it change the vector of influence of natural-ecological factor on the economic growth? Show it by example.

4. What are the reasons of energy-ecological crisis of the beginning of the 21st century and what are the prospects of its overcoming?

5. Are the natural resources used by society gratuitous force? How to evaluate and reflect

the cost of its reproduction in the system of economic relations?

6. Why, despite all the efforts of the UN, do the ecological threats grow in the world? What should be done to reverse this tendency?

7. What economic mechanism is needed to ensure the rational use of natural resources and to reduce ecological threats to civilization? Are the measures proposed in the Sustainable Development Goals to 2030 adopted by the UN, sufficient?

8. How should it be taken into account interests of future generations in the natural-ecological policy? What can be done for this the leaders of the new generation?

CHAPTER 11. THE TECHNOLOGICAL BASIS OF ECONOMIC DYNAMICS

Economic growth, therefore, an increase in the level and improvement of the quality of life of population (Andrej Storch called it a national welfare), are determined by many factors: the qualifications of people employed in the economy, inclusion in the production of new natural productive forces, the progressive shifts in the structure of the economy and a more modern management, etc. But the decisive role among these factors belongs to the scientific and technological progress, the use of more efficient and effective technological tools and technologies, the speed and scale of the use of technological innovations. The key role of this factor rises in the 21st century in the conditions of the growth of the scarcity of labor and natural resources. But it can be a lever of economic crisis and decline in production in the conditions of scientific and technological degradation and a refusal of states to support basic innovations, as happened in the post-Soviet space in the 1990s.

11.1. The Relationship of Technological and Economic Dynamics

The Technological Basis of Economic Cycles

Chapter 2discloses the regularities of the cyclic dynamics of the economy, periodic mid-term, long-term (Kondratieff) and super-long (civilizational) cycles of different duration and depth. The root causes of these crises should not be sought in the material and technological base of production. Such a discovery was first made by K. Marx who formulated the point that the material basis of the periodicity of economic crises is the renewal of fixed capital. This situation was developed by N.D. Kondratieff, showing that the renewal of basic capitalist goods with a long service life is the basis of a new large conjuncture cycle and that the crisis recovery is preceded by a wave of scientific discoveries of a new major cycle and significant technological inventions that are at the beginning of the downward wave are expressed in the burst of innovations, opening the way to economic growth[1]. Thus it was discovered the basic law of the economic crisis recovery.

S.Yu. Glaziev elaborated the action mechanism of this law by substantiating the strategy of advancing economic growth through the assimilation of the technical progress achievements[2].

The Key to Overcoming the Civilizational Crisis

Overcoming the civilizational crisis, the transition to an integral world civilization, entering the trajectory of sustainable and relatively high economic growth are possible on the basis of large-scale assimilation of the achievements of the scientific and technological revolution of the 21st century (STR-21), an accelerated transition to the sixth technological order that implements these achievements.

STR-21 includes the scientific revolution of the first quarter of the 21st century that completes by a wave of scientific discoveries and major inventions, and the technological revolution of the second quarter of the 21st century that finds expression in the spread of TO-6 based on the wave of the basic innovations, acceleration of the pace of economic growth,

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[1] *Kondratieff N.D.* Long Cycles of Economic Conjuncture and a Theory of Foresight. M.: Ekonomika, 2012. P. 374.
[2] *Glaziev S.Yu.* The Strategy of Development of the Russian Economy. M.: Economika, 2010.

transfer of technological and economic leadership of civilizations of the West and economic growth to the civilizations of the East, which has already been observed in the early 21st century. In this regard, one cannot agree with the foresight of T. Piketty of the tendency to fall in the rate of world economic growth by the end of the 21st century to 1.5-1% compared to the current 2.7-2.8%[1].

In the context of the inevitable increase in the share of social and economic costs, this would mean a significant drop of the share of population in the GDP and the degradation of the economy. One can expect with more confidence an increase in the rates of world economic growth to 3.5-4% in the second half of the 21st century on the basis of the transition to the upward wave of the sixth Kondratieff and seventh civilizational cycles.

11.2. The Economy of Innovation

The Magic Formula for Economic Growth

The economic growth at the national and global levels in the process of civilizational development has in its basis a successive chain of operations objectively determined by logic which can be expressed by the following formula:

$S_d \rightarrow I_m \rightarrow I_b = R_{ar} \rightarrow C_{ip} \rightarrow E_g$, where

S_d - scientific discoveries of new regularities in the development of nature and society and their interaction - in natural, ecological, technological, medical, social, and human sciences;

I_m - a wave of major inventions, revealing the possibility of practical use of discovered regularities and categories;

I_b - a wave of basic innovations, implementing major inventions in new technological orders and generations of equipment and technologies with higher productivity;

R_{ar} - the absolute and relative reduction in price of products of new generations that implement major inventions;

C_{ip} - high competitiveness of innovative products and new generations in the world and national markets and thus the economies of the countries which are in the vanguard of the development of the STR-21 and TO-6;

E_g - acceleration of economic growth rates on the basis of high competitiveness first in the vanguard countries, and then in the catching-up countries and the global economy in general.

The Strategy of Innovative Breakthrough

The assimilation of a wave of basic innovations of a new technological order underlies the transition to a new technological and economic cycle. However, this requires large-scale investments, for which the business is reluctant. Therefore, for the timely and large-scale development of a new technological order a large-scale governmental support is required. It refers to the following:

✓ budgetary financing of fundamental science, forming a new paradigm and creating

[1] *Picketty T.* Capital in the 21st Century. M.: Ad Marginem Press, 2015. P. 587.

scientific discoveries for the new technological order;

✓ support of basic innovations (in partnership with business) for the assimilation of fundamentally new products on the basis of major inventions, the complete or partial reimbursement of the temporary high costs of assimilation of fundamentally new products;

✓ creation of a favorable investment climate for the spread of basic and improving innovations, implemented on the competitive basis by business;

✓ financing costs for the development and dissemination of basic and improving innovations in the non-market sector of economy (science, education, culture, ecology, defense, public administration).

This approach is implemented on the basis of long-term strategies of innovation and technological breakthrough. Such strategy is consistently implemented in China, where at the beginning of the 21st century is observed priority development of science, inventive activity (applications for inventions from residents in 2013 reached 37% of the world), large investments in innovations, and the share reached 26% in the world high-tech exports. President of the Republic of Kazakhstan N.A. Nazarbayev has proved the need for a strategy of advancing innovation and technological breakthrough for the Eurasian Economic Union.

However, such strategy has not been yet developed. To ensure the economic growth on the basis of innovative renewal of fixed capital it will be required to ensure fixed capital accumulation in the GDP.

This is especially important during periods of transformations to provide an innovative breakthrough. While the under-accumulation leads to a fall in competitiveness and technological lag. But the over-accumulation also weakens the possibility of expanding home demand and can lead to slowdown in economic growth rates, as evidenced by the recent experience of China. The figures in table 11.1.indicatethe tendencies in the proportions of consumption and accumulation.

Almost for a quarter of a century (from 1990 to 2013) under conditions of civilizational crisis, the share of the consumption fund (households and states) increased in the general in the world from 76 to 78%, while the share of the accumulation fund decreased from 24 to 22%; it became one of the factors for slowdown of the economic growth rates. While in the high-income countries, in which the fifth technological order prevails, the share of accumulation dropped from 24 to 20%, and the rate of economic growth declined from 2.6 to 1.7% (in the USA from 3.6 to 1.7%). At the same time in the middle-income countries the share of gross capital accumulation increased from 26 to 31%, and the GDP growth rates - from 4.4 to 6.8%. The leader turned to be China, where the share of accumulation increased from 35 to 49% and the growth rates exceeded 10%. However, it had already been over-accumulation of capital (with a drop in the consumption share of households from 47 to 34%, which would have inevitably leaded to a relative contraction in consumer demand and a decline in economic growth rates).

While in the high-income countries the technological level of the economy is much higher, but they lag behind with an innovative update of the productive apparatus that doom them to low economic growth rates in the long term. At the same time in the vanguard developing countries, and first of all in China, the outstripping economic growth rates are provided by high level of accumulation and innovative renewal of fixed capital.

TABLE11.1. Proportions in GDP Distribution, %

Indicator	Consumption				Gross accumulation of fixed capital		Economic growth, %	
	Households		Overconsumption					
	1990	2013	1990	2013	1990	2013	1990-2000	2000-2013
World	60	16	16	18	24	22	2.9	2.8
High-income countries	60	61	17	18	24	20	2.6	1.7
USA	68	68	14	15	24	20	3.6	1.9
Germany	57	58	19	19	24	19	-	-
Japan	67	51	17	21	25	21	1.0	0.7
Middle-income countries	59	55	16	14	26	31	4.9	6.8
China	47	34	13	14	19	23	10.6	4.6
India	64	59	15	11	24	33	4.7	6.0
Russia	46	52	15	20	19	23	4.2	7.6
Indonesia	61	59	7	9	22	34	2.7	5.6
Brasilia	64	63	19	22	18	18	-	3.6
Low-income countries	78	77	10	10	20	20	4.3	6.2

Source: 2015 World Development Indicators. Washington: The World Bank, 2015. Table 4.1, 4.8.

It should be noted that in 2014, there was observed a reversal of the tendencies in the world dynamics due to changes in world market conditions, a sharp drop in prices for fuel and raw commodities. In Russia and Brazil, it is observed an economic decline, in China - the slowdown of economic growth rates. Nevertheless, the long-term trend of the outstripping innovative growth of the vanguard countries with middle income will persist, and "bubble economy" prevailing in high-income countries more and more clearly reveals its inability to explain the capital renewal and high growth rates. The future is with innovation-oriented integral economic system.

11.3. The Law of Social Labor Productivity Growth

The Basis of the Progress of Civilizations

The progress of civilizations is based on the growth of social labor productivity, measured as the production of GDP (at constant prices) per employed in the economy, indirectly - as the GDP per capita. Productivity improvement in the valleys of great historical rivers created the conditions for the production in a significant amount of surplus product for the maintenance of state and spiritual reproduction sphere. Labor productivity increased from epoch to epoch. In the periods of civilizational crisis the labor productivity often fell, but then the growth tendency resumed. Thus, in the 1st millennium A.D. GDP production per capita fell by 4% (in Western Europe by 26%, including in Italy as a result of the breakdown of the Roman Empire by 45%). Later, however, the growth tendency prevailed in the GDP per capita: 26% to 500, at an additional 18% by 1820. In the period of industrial civilization it was observed an accelerated growth - 7.75 times by 2003 as compared to 1820. The record growth rates were achieved in 1950-1973, but then they began to slow down, which is inevitable during the civilizational crisis. The average annual rate of labor productivity growth in the world in general fell from 3% in 1950-1960 to 1.1% in 1990-2000.

With the transition to the upward wave of the sixth Kondratieff and the seventh civilizational cycles it can be expected an acceleration of labor productivity growth rates, especially in the vanguard countries and civilizations.

Labor Productivity Growth Factors

One can distinguish the following main factors of labor productivity growth at the national and global levels.

First, raising the technological level of the economy (increase in the share of fixed assets in the production of various technological orders and generations of equipment, high rates of their innovative renewal). These two interrelated factors play a decisive role in the competitiveness of economy and, consequently, the volume and dynamics of GDP.

Second, the structure of economy, the growth of the share of sectors in it with a high level of the value added per employed in the industry, which, in turn, depends on the level, structure and dynamics of prices for different groups of goods and services. Then spheres of spiritual reproduction get the understated estimate, but they do not provide for profit formation under the budgetary allocations.

Third, the increase in the number of employed in economy, the share of highly skilled labor. A growth in the share of migrants in the number of employed plays a contradictory role, depending on the structure of migrants: in Western Europe, it reduces labor productivity due to the influx of low-skilled labor from Asia and Africa, and in the USA – it increases, as the set is for "import of brains".

Fourth, the level and dynamics of labor productivity depends on the policy of the state: the active support of technical progress, innovations, education, securing employment, structural policies, etc.

Fifth, it should be taken into account civilizational features in the use of labor productivity factors. For example, in Muslim, African, Indian civilizations with high population growth rates, low levels of literacy, especially among women, labor productivity is much lower than in North American, Western European and Japanese civilizations.

TABLE 11.2. Labor productivity by civilizations and leading countries

Civilizations and leading countries		**1900**	**1913**	**1929**	**1938**	**1950**	**1960**	**1970**	**1980**	**1990**	**2000**	**2000, % of the world**
World	a	3.9	4.7	4.7	5.9	6.9	9.3	12.1	14.4	16.8	18.7	100
	b	-	1.4	1.2	0.4	1.3	3.0	2.7	1.8	1.6	1.1	-
Civilizations of Europe												
Western European	a	9.9	11.1	13.2	15.2	14.5	20.9	31.1	38.6	46.7	53.9	288
	b	-	0.9	1.1	1.6	-0.4	3.7	4.0	2.0	1.9	1.3	-
Eastern European	a	5.3	5.5	6.1	6.4	12.2	20.8	27.0	31.4	30.6	33.6	180
	b	-	0.3	0.6	0.5	-	-	-	-	-	0.9	-
Eurasian												
USSR	a	4.1	5.2	5.4	6.5	9.9	18.7	24.2	28.9	26.6	14.6	78
	b	-	1.8	0.2	2.1	3.6	6.6	2.6	1.8	-1.0	-5.8	-
Russia	a	5.2	5.9	7.1	8.0	10.7	20.8	26.8	20.5	27.5	15.4	-
	b	-	1.0	1.2	1.3	2.5	6.9	2.6	1.0	-0.5	-5.8	-
Civilizations of America and Oceania												
Northern American												
USA	a	17.0	21.9	30.4	29.0	25.3	38.2	49.6	59.6	69.5	73.1	391
	b	-	2.0	2.1	-0.6	1.6	0.8	2.5	0.9	1.5	0.5	-
Latin American	a	3.8	4.5	5.4	6.5	8.4	10.9	12.3	17.5	17.1	17.6	94
	b	-	1.4	1.1	2.1	2.2	2.5	1.9	3.6	-0.3	0.4	-
Oceanic												
Australia	a	14.2	17.0	16.5	18.2	23.1	27.0	35.4	43.7	51.4	58.8	314
	b	-	1.5	-0.2	1.0	2.0	1.6	2.7	2.1	1.5	0.5	-
Civilizations of Asia and Africa												
Japan	a	3.1	3.9	6.2	7.8	6.2	12.0	26.7	37.8	53.7	54.9	294
	b	-	1.8	2.9	2.6	-1.9	6.8	7.9	3.2	3.6	0.2	-
China	a	1.0	1.0	1.1	1.0	1.1	0.9	1.2	1.1	3.1	7.0	37
	b	-	0.0	0.6	0.0	-1.7	2.9	-0.9	1.7	9.1	8.5	-
India	a	1.7	1.8	1.8	1.7	1.6	1.8	2.0	2.5	3.4	5.9	32
	b	-	0.4	0.0	-0.7	-0.5	1.2	1.0	2.3	3.2	5.7	-
Buddhist												
Thailand	a	2.0	1.9	2.0	2.0	2.5	3.5	5.6	19.2	17.9	19.4	91
	b	-	-0.4	0.3	0.0	1.9	3.7	4.8	5.1	6.3	1.3	-
Republic of Korea	a	2.3	2.5	3.0	3.1	2.6	3.3	6.8	13.3	27.8	41.1	220
Moslem												
Middle East, North Africa	a	1.7	2.0	2.3	3.3	5.0	8.4	13.4	19.5	19.0	20.9	112
	b	-	1.3	0.9	4.1	3.5	5.3	4.8	3.8	-0.3	1.0	-
Pakistan	a	2.5	2.0	2.8	2.8	2.9	2.7	3.3	4.4	5.7	6.1	33
Indonesia	a	2.3	2.3	3.1	3.4	2.7	2.9	3.5	6.5	9.8	10.0	53
Sub-Saharan Africa	a	2.0	2.2	2.3	2.4	3.0	3.5	3.7	4.0	4.3	4.6	25
	b	-	0.7	0.3	0.5	1.9	-	-	0.8	0.7	0.6	-
The gap between the upper and low level, times		17.0	21.9	26.3	32.1	39.2	31.8	45.1	45.8	22.4	17.9	-

Source: World Economy. Global Tendencies for 100 Years / Under the editorship of I.S. Koroleva. M.: Yurist, 2003. P. 539-540.

The figures in Table. 11.2. show the level and dynamics of labor productivity by civilizations and leading countries.

To solve the strategic objectives of eradicating poverty and hunger in the world and reducing the migration flows from poor to rich countries it will be necessary to develop and implement a long-term strategy of employment policies and improving labor productivity and living standards in low-income countries, to accumulate for these purposes substantial resources

in funds created by the United Nations.

Control questions and tasks

1. What role does the technological factor play in the economic growth of states and civilizations? Is it possible to ensure sustainable economic growth without relying on the technological factor, as is the case in the documents of the UN?

2. Name the regularities and tendencies of interrelated technological and economic development in the change of generations of equipment, technological orders and technological modes of production.

3. What is the technological basis of civilizational and economic crisis in the first quarter of the 21st century in the world and in Russia? How should this factor be considered in the development of global and national anti-crisis programs?

4. Do you agree with the formula for economic growth given in 11.2? How should this formula be considered to develop scientific-technological, innovative and economic strategy?

5. On what principles should it be built a partnership of state and business during in assimilation of basic and improving innovations? What role should the state play in the innovative renewal in the non-market sector of economy?

6. What are the regularities and tendencies of social labor productivity in the different phases of the civilizational cycle?

7. Tell what determines the level and dynamics of social labor productivity and show the relationship between these factors.

CHAPTER 12. ECONOMIC BASES OF THE SPHERE OF SPIRITUAL REPRODUCTION

In the previous chapters of the textbook the issues of political economy were addressed mainly with regard to the sphere of material reproduction, material benefits and services in the system of market-capitalist economy, although showing its limitations and the existence of the non-market sector. Now we have to delve into the complex area of economic relations in the sphere of spiritual reproduction.

12.1. A Shift of Socio-Cultural System

The Concept of Socio-Cultural System

World civilizations (historical epochs in the development of global civilization) and generation of local civilizations are different from each other by socio-cultural component of the genotype of civilization - the sphere of spiritual reproduction, the system of civilizational values. The concept of socio-cultural system was first introduced into scientific discourse by Pitirim Sorokin. He distinguished three types of such system: sensate, with a predominance of material values; ideational (the super-sensate), with the dominance of religious values; integral synthesizing the advantages of sensate and ideational. For thousands of years in different civilizations it takes place a change of a socio-cultural system. The Russian civilizational school has expanded this concept to include the socio-cultural component of the genotype of civilization in the sphere of spiritual reproduction (science, education, culture, morality, religion, system of civilizational values).

The Prevalence and Decline of the Sensate System

P. Sorokin showed that over the past five centuries in the West the sensate socio-cultural system prevailed and achieved great successes in the development of science and education, and from the middle of the 20th century entered the crisis stage, decline. These tendencies intensified at the end of the 20th - beginning of the 21st century. It fades away the creative potential of science and education, culture is over-commercialized and turned into a show business, morality falls, the family declines, religion is losing ground. It spreads according toP. Sorokin, the negative moral and religious polarization. These processes have the most vivid embodiment in the Western civilization. At the same time in the civilizations of the East it prevails (Moslem civilization) or retains its position (Chinese, Indian, Buddhist civilizations) the ideational socio-cultural system.

From the beginning of the 21st century it manifests itself more and more clearly a positive moral and religious polarization, formation of the integral economic system, which is likely to become prevailing by the middle of the 21st century in the vanguard civilizations. The creative activity of science in the formation of a new paradigm is rising, it enhances the fundamentality and creativity of education, high culture is reviving, it strengthens the moral foundations of society and the family, religion livens up. All these signs of the formation of the integral economic system will continue to grow and spread, first in the East, and then in the West.

The Socio-Cultural System and Economy

Consideration must be given that the nature of the socio-cultural system directly affects the economy, its dynamics. The level of economic development and economic growth rates depend

on the level and pace of development of science and education. The underestimation of science and education becomes a hindrance in the development of the Moslem civilization. A growth in the share of expenditures on science in GDP, a many time increase in research activities in China have become a factor of record economic growth rates and scientific and technological development. Degradation of science, education and morality in the Eurasian civilization became the prime factor in a deep economic depression in the 1990s, the effects of which have not been overcome at the beginning of the 21st century.

The political economy of civilizations attaches great importance to socio-cultural factors, the sphere of spiritual reproduction, thus differing from the classical and Marxist political economy, which was focused on the market-capitalist relations.

12.2. Spiritual Reproduction as the Subject of Political Economy of Civilizations

A. Storch included in the immaterial benefits as the subject of political economy the elements of civilization - health, education, knowledge (science), the cult (religion), morals, as well as external and internal security. P. Sorokin introduced into scientific discourse the concept "socio-cultural system", which he understood in wide sense, including not only the elements of spiritual reproduction (philosophy, science, culture, ethics, and religion), but also the system of economic and political relations, but left without the attention the natural-ecological and technological components of the genotype of civilization.

The political economy of civilizations uses the classification proposed by A. Storch, but the elements of civilization are distributed by different classes: health issues are discussed in the chapter on population, about the natural benefits - in the chapter on natural-ecological basis of civilization. The subject of this chapter will be categories, regularities and tendencies in the development of the sphere of spiritual reproduction, i.e. spiritual benefits, civilizational values. The content of this field was revealed in 2007 in the monograph "Prospects for Socio-Cultural Dynamics and Partnership between Civilizations."

The sphere of spiritual reproduction is decisive in the formation and development of civilization. The following classification of the spiritual sphere of reproduction components is proposed.

Its foundation is philosophy and science (I understand philosophy as an integral part, the top of science, but P. Sorokin and many philosophers takes it separately as a worldview of man). The main function is understanding the world, society and oneself, discovering their categories (phenomena), laws and regularities of statics, dynamics, genetics, ways to use this knowledge in practice. The main results - scientific discoveries and inventions. This is mainly the result of left-hemisphere activity of the human brain.

The second element - culture - imaginative, aesthetic perception of the world that is expressed in art, architecture, and literature.

12.3. The Sphere of Spiritual Reproduction

The Rise of Science

In a society that is developing on the noospheric principles, scientific knowledge determines the technological level, efficiency and competitiveness of economy, rise in the level

and quality of life. Fundamental scientific knowledge is not made on market principles; they are the result of a free search of scientists. The task of society and the state is to create the most favorable conditions for such search and use of its results. Scientific discoveries cannot become a commodity, and they appear not every year and in every country. From time to time it occurs, as noted by V. Vernadskiy[1], outbursts of scientific creativity in some countries, and one needs to create the most favorable conditions for the evaluation, dissemination and use of these results.

However, it is important to evaluate the work of scientists and research teams not by the number of publications in a small number of journals and citation index, but by the number of applications for scientific discoveries and inventions and received certificates and patents. While in the post-war decades, expenditures for science in the world and in most countries increased rapidly, then in recent decades it is observed a drop in the share of expenditures for science in GDP from 2.38% in 2010 to 2.13% in 2013, and in Russia and other post-Soviet countries, the real science expenditures have fallen sharply, there is a tendency to a fall in this share. There is a low share of expenditure for science in the Muslim countries (except Malaysia), Africa, and India.

From the beginning of the 2010s in the world it evolves a scientific revolution, a new scientific paradigm that is adequate to the realities of the 21st century is taking shape. The task of the state is to ensure the rise of science and effective use of the results in order to overcome the crisis and entering the path of global sustainable development.

Enhancement of Creativity of Education

The function of the system of education is not only the transfer of the accumulated sum of knowledge and skills by society to future generations, but also the development of creative abilities, creativity of the members of society, the ability to innovative actions and adaptation to changing working conditions in life through continuing education. It should be noted negative tendencies in the development of education, including under the influence of neo-liberal concepts: excessive pragmatization and reducing the fundamentality of education, a significant loss of creativity, set to replace a rapidly aging body of knowledge; excessive spread of market economy principles on the sphere of education, the increase in fees for professional education and the number of private educational institutions.

The prevailing system of education today does not meet the changed conditions of life and work. The new generation is not ready to the changed conditions, the growing inflow of innovations. A significant part of it finds itself unemployed and can become dangerous destructive force.

There is a long-felt need in a new revolution in education on the basis of the following principles. First, increasing the fundamentality of education, transmitting to future generations the foundations of a new scientific paradigm, the latest achievements of the scientific revolution, shaping a worldview that is adequate to the changing world. One of the areas is the development of civilizational education, including the teaching of political economy civilizations at the universities. Second, the emphasis on the creativity of education, development of creative abilities of the young generation. Third, the implementation of continuous education, systematic

[1] *Vernadskiy V.I.* Works on the General History of Science / AS USSR. M.: Nauka, 1988.

training and professional development of employees at all levels, including statesmen and international officials. Fourth, synthesis of scientific, educational and information revolutions, filling information networks with systematized scientific and educational knowledge, the creation of portals of the world scientific heritage, a network of virtual scientific and educational museums, and educational tourist routes. Fifth, decommercialization of education, the abolition or reduction of tuition fees, and reducing the number of private educational institutions. It is necessary to eradicate the spirit of the market from the sphere of education scope of the new generation and increase the share of education expenditure in GDP. In 2013, it was from 5.5% in the Euro zone and 2.1% in South Asia.

The Revival of High Culture

The prime component of the sphere of spiritual reproduction is culture, the transmission from generation to generation, use and enrichment of the world civilizational and national cultural heritage and diversity. In this area there are observed dangerous tendencies of a loss of cultural heritage and diversity due to the excessive commercialization of culture, development and dissemination of impersonal mass culture through the information networks.

At the same time there appear signs of revival of high culture, the rise of interest of a new generation in it. The activity of the Russian TV channel "Culture", contest "Grand Opera", "Grand Ballet", "Bluebird", an increase in the number of visits to theaters, museums, concerts of classical music may serve as an example. In the 1990s, American futurologists John Naisbitt and P. Aburdene predicted the emergence of a new Renaissance. One should support these tendencies, develop strategies for revival of high culture, a more active use of the great cultural heritage, and development of the aesthetic education of youth. It is necessary to fill the information networks with works of high art and weaken the influence of the market, show-business on culture, the youth.

Civilizational Tourism

One of the areas of transmission of world cultural and civilizational heritage to a new generation can become a civilizational tourism, giving the overall understanding of the major components, historical heritage and the system of values of any g civilization. The idea of civilizational tourism was put forward by SKII (Yakovets Yu.V.) and travel company "Mir" (Friedman V.B.) in 2000, it is implemented in a number of projects, and the textbook on the subject is prepared.

Tourism is not just one of the sectors of fee-based services. It can be fully attributed to the sphere of spiritual reproduction, health promotion and expansion of human knowledge. The international tourism in 2013 involved 1.381 million people, not less is involved in domestic tourism. Educational civilizational tourism will contribute to the perception of the world cultural and historical heritage in the spirit of dialogue and partnership of civilizations by new generations.

CHAPTER 13. ECONOMY AND THE STATE

Let us proceed to the problem that reveals the essence of political economy, its specifics as a science of the regularities of functioning and development of economy in indissoluble unity with the policy, state power, mechanisms for the implementation of such interaction.

13.1. The Origin and Stages of the Evolution of Economy and the State

Synchronicity of the Origin of Economy and the State

The three social institutions of prime significance are economy, the state and local civilizations - were born at the same time and are linked by one historical epoch of the formation of the *early class* world civilization about five thousand years ago. It happened in a relatively narrow band of oecumene (the inhabited part of the Earth) - in the fertile valleys of the great rivers the Nile, the Tigris and the Euphrates, the Indus and the eastern coast of the Mediterranean region (the present Middle East, Crete island) on the basis of the development of the Neolithic cultures and the urban revolution, the transition from the communal – tribal to the class-state structure of society. This shift has no less historical significance than the Neolithic revolution for 4.5 thousand tears, and became an important stage in the evolution of man and civilization.

First, with an increase in population, the emergence of cities, the creation of irrigation farming systems, market development and trade it significantly complicated the system of relations between people. A need arose in a new social division of labor - the separation of a large group of people who are exempt from participation in the material reproduction, who could perform important management functions for society, including the regulation of the system of economic and other social relations, the protection of internal security, defense from external enemies, the attack on neighboring states and tribes in order to replenish and capture the wealth. Second, for such division of labor there were created economic prerequisites in the form of sustainable and substantial production of surplus product, which can be used not only for the maintenance of the state but also for the construction of palaces, temples and pyramids. Third, the state became an additional productive force, organizing collective work for the maintenance of irrigation systems, arrangement of seasonal work, and major construction.

It corresponded to the *second generation* of local civilizations of the ancient period (the 1stmillennium B.C.–middle of the1st millennium B.C.) the second generation of states of slave type with modifications in the West (in the Mediterranean) and the East (China, India).The social basis of these states was the slave economy, combined with the rural community of free farmers, craftsmen and merchants under the harsh supremacy of the ruling class.

The biggest innovation in the new geopolitical cycle was the emergence of democratic system in ancient Greece, which spread to the Mediterranean civilizations of the second generation. This was the equality of free citizens. The main points of democracy were the electivity and replacement of representatives of the authorities, their equality with citizens and accountability.

In the civilizations of the East (China, India) it prevailed a different model of the state structure - rigid centralization of the supreme power while recognizing the priority of collective interests to the individual ones. This found expression in political ideology, formulated by Confucius.

A feature of the second socio-political cycle became the emergence of world empires - the large state systems, uniting peoples of different civilizations. Such empires were the Achaemenid Empire (the 7^{th} – 4^{th} centuries B.C.), the empire of Alexander the Great, the Roman Empire, which became a model for the world empires of the next historical epochs.

States of the Third Generation

It corresponded to the *third generation* of local civilizations of the Middle Ages a new generation of state formations. It differed from the previous one by several features, however, different in the West and East. First, at the heart of power in the West lay the pyramid of feudal vassalage. At the top of the state power was the supreme ruler who relied on the upper layer of vassals, who, in turn, were vassals of the lower layer, upon whom depended the community of peasants - major suppliers of soldiers for war and imposts for the maintenance of the feudal pyramid. The state power was divided between the levels of the power pyramid. Second, the state power was closely intertwined with the religious power (in Western Europe - the papal power, the Byzantine Empire - with the power of the patriarch), which had their own sources of income ("tithe", its own economies). The state structure in the Moslem civilization was based on Sharia law. Third, the world empires of that generation were less decentralized than the Roman Empire, with a significant weight of the religious element. The empires of the East (Chinese, Indian, Arab Caliphate) and the Byzantine Empire (until it was replaced by the Ottoman Empire) leaded.

This period was characterized by endless wars (mostly the bloody religious campaigns) both between empires and civilizations, and within them, leading to large losses of the working population and the destruction of economy that impeded the economic growth.

A special element in the states and economy of that period was the emergence of free cities (to some extent they existed in the form of trading cities in the Achaemenid Empire). Free cities sprang up in the trade and craft centers on the great trade routes. They defended their independence and democratic order in the struggle against the feudal lords. Free trading cities of Northern Europe united in the Hanseatic League - a kind of the trading empire with the democratic system. In Eastern Europe there were veche trading cities, united in the Novgorod republic - a unique democratic state with a vast territory and veche system. The two centuries before the Magna Carta in England in 1019 Yaroslav the Wise granted a certificate to the Novgorodians, according to which they could hire and fire the princes. The prince and his armed forces did not have the right to live in Veliky Novgorod, collect taxes, and the Popular Assembly (veche) could dismiss such unwanted prince. Free cities featured Pskov, Staraya Russa, Vyatka and others.

The new, bourgeois-democratic political system of the state of the *fourth generation* established as a result of the Dutch, the English, North American and French revolutions and the Napoleonic wars. The features of that political system were:

✓ the establishment of bourgeois democracy while recognizing the equality of all citizens, separation of powers, the elected representatives of the authorities and their accountability to the electorate, the emphasis on the rights and freedoms of citizens;

✓ recognition of the primacy of law in the regulation of economic, social, political and other relations;

✓ spread of colonial domination of the West with the conquest of America, Australia,

Africa, India, the countries of Southeast Asia;

✓ formation and confrontation of colonial empires – Spanish, Portuguese, British, French, Russian, Ottoman, German and Austro-Hungarian. The world was shaken from military clashes of states and empires - the Hundred Years War in Europe, the Napoleonic wars, the apotheosis became the first and second world wars in the 20th century and the cold war.

After the Second World War it began a period of decline of the fourth generation of local civilizations and its inherent socio-political order in the postwar decades. The main players in the geopolitical arena became the states which number was increasing rapidly. In 1945, it was created a geopolitical union of a new type - the United Nations Organization, which reflected the postwar ratio of major geopolitical forces and has done much to prevent another world war, the development of international law and dialogue among states. Now the United Nations brings together 193 sovereign states of different scales of all continents and civilizations.

But under the geopolitical order of the fourth generation it remained the fundamental differences of western and eastern models. Attempts to mix them have failed. Fascism in Germany and Italy in 1930-1940s was trying to implement in the West a model of a totalitarian political order, but it ended in failure. Since the 1990s, the Western civilizations tried to impose on the Eurasian and Muslim civilizations their model of political order. It has ended in nothing good either in Iraq nor in Afghanistan, or in Libya. You cannot impose by force on other civilizations own political orders, passing them off as universal. While there are common features and tendencies each civilization has its own specifics of socio-political order, which cannot be ignored.

13.2. Cyclic Dynamics of Social Structure of Society

The Political Order and Social Structure

The political order reflects the social structure of society, its division into social classes - classes, national, ethnographic, age-sex groups, etc.

The political system of local civilizations from the end of the 20th century is in a state of crisis and transformation. The system of bourgeois democracy in Western countries degenerates, the foundations of a new geopolitical mode are being laid. While in the Neolithic civilization the social structure of society was divided by sex and age groups, communities, clans, tribes, then since the formation of local civilizations, the states, system of political relations, the social structure of society became complicated and continues to be more complicated from one civilizational cycle to another. The system of political relations reflects the palette of interests of classes and diverse social groups and relations between them, the social and economic stratification of society. One of the possible classifications of modern social classes allows distinguishing the following groups: civilizational layers (not only within the global and local civilizations, but also within individual states, as is observed in Western Europe, the USA, India, Russia and other countries); national and ethnic groups; classes, which differ in their position in the system of social reproduction and property relations; professional groups; age-sex groups and generations; religious and cultural groups; political parties and non-governmental organizations; and interest groups.

The Evolution of Social Structures

Each civilizational cycle, every generation of local civilizations have their own specific

social structure, which changes with the change of civilizational cycles. For the early class civilization it was characteristic the division of society into the following social strata: the land and community, craft, trades people; ruling class; clergy at temples; slaveholders of different levels; slaves who did not have any political and civil rights. One can talk about four classes - slaveholders, slaves, dependent peasants, craftsmen and merchants.

The social structure changed in the ancient society. In the Greek poleis the main political power were free citizens, not all of them were slave owners. Along with the slaves the freedmen appeared who had some civil rights.

For the third generation of local civilizations the social hierarchy complicated. The main classes were dependent peasants, feudal, urban craftsmen and merchants. The stratification went among the feudal lords and in the urban environment.

For the civilizations of the fourth generation (the 16^{th}-20^{th} centuries) the main classes were the capitalists and the wage workers. But the well-off strata were peasants, landowners, and civil servants.

13.3. Areas and Forms of Interaction between the Economy and the State

Fields of Cooperation between the State and the Economy

The main areas (fields) of interaction between the government and the economy include:

✓ legislative regulation of the rules of running economy, the functioning of the market and non-market sectors of economy; property relations and its protection and defense; judicial- legal forms of resolution of disputes arising (civil law), punishments for gross violation (criminal law);

✓ rules for the imposition and collection of taxes and other payments necessary for the functioning of the state apparatus, the army, etc.;

✓ strategically-innovative function of the state, identification of prospects for the development of society;

✓ provision of legal socio-cultural conditions for development of economy through support of science and education, culture and ethics;

✓ ensuring internal and external security for functioning and development of economy, fighting corruption and the shadow economy, the diplomatic support of the foreign policy activities.

The Mechanisms of Interaction between the State and Business

The interaction of economy and power focuses on four areas:

✓ area of executive rights of the state in the defense, administration, maintenance of internal security; economy creates conditions for the exercise of these functions by taxation and other forms of fiscal activity of the state;

✓ area of the predominant business activity, where the state is limited to the definition of "rules of the game" and protection against their breach;

✓ area of public-private partnerships, joint activities of the state and business in the implementation of major projects, in the development and implementation of long-term and

medium-term strategies, support of small and medium-sized businesses, the development of new industries and territories, etc.;

✓ area of direct jurisdiction of the state (economy of military-industrial complex).

To implement its functions by the State it is spent in the world about 20% of GDP, including the high-income countries - 18%, with middle-income - 14%, with low-income - 10%, which is insufficient to perform the functions on the development of economy and social support. A significant portion of these funds is spent on defense needs: in 2013 2.3% of the world, countries with high income - 2.5%, middle-income - 3.2%, low-income - 1.9%[1].

The mechanism of interaction between the state and business includes:

✓ taxes and other charges imposed on all organizations and citizens who receive income, for the maintenance of the state;

✓ income from governmental property (royalties, dividends on governmental shares, the proceeds from arms sales, etc.);

✓ public expenditure on the maintenance and development of health care, social security, culture, education, science, etc.;

✓ expenditures on the state apparatus and the army, the courts, etc. - to ensure internal and external security;

✓ expenses in case of emergency situations - natural and anthropogenic catastrophes and disasters, terrorist attacks, etc.;

✓ support of subsidized regions and municipalities so that they can perform their functions.

Will the State Wither Away?

One of the active principles of Marxism was the assertion that the state as an apparatus of coercion will wither away at a higher phase of communism. This point was substantiated in V.I. Lenin's "State and Revolution". The neoliberal economists believed that the state should play a role of "night watchman" in a market economy, defining the "rules of the game" and ensure their implementation. This position is grounded in the monograph by Ye. Gaidar "State and Evolution".

Both approaches are erroneous. The state arose from the need of formation and development of civilization, as an element of its genotype, hereditary nucleus, performs the prime important functions in the organization of interaction of all its components and will continue as long as there will be civilizations. Its role especially increases in critical situations when changing civilizational and Kondratieff cycles and in natural and other disasters.

Performing the functions by the state requires a high level of knowledge and skills of government officials. This was recognized in China, where it was arranged the study of Confucian ideas and examinations in the presence of the emperor. The names of those passed the exams were carved on the stone stelae which are kept in the museum of Confucius in Beijing. The Russian Imperial House also understood it: "The Course of Political Economy" by A. Storch

[1] 2013 World Development Indicators. Washington: The World Bank, 2013. Tables 4.8, 5.7.

was written on the basis of a series of lectures that were read for the imperial family for 20 years, and with the support of the imperial house.

Unfortunately, most of the current leaders and senior civil servants have a level of training that does not meet the complexity and depth of contemporary transformations, which leads to a large number of strategic mistakes. The course of political economy civilizations should become a compulsory subject of study for high-ranking officials of all states and civilizations as well as for international officials. This will help to attainment of the UN Sustainable Development Goals and the establishment of an integral, humanistically noospheric civilization.

Economy and Wars

The interaction of the state, economy and wars is multifaceted and contradictory. On the one hand, the state emerged as an institution of warfare - defensive and offensive. To do so the power and the army are needed and for their maintenance - developed economy. Wars were a tool to protect economy and to replenish economic resources by capturing prisoners, who were turned into slaves, to capture riches. New conquered territories expanded the scale of markets. One can say that the wars are beneficent for economy. On the other hand, the wars had a negative impact on economy. The most capable male population was diverted from productive labor, from reproduction and was called up for service in the army; many of them were killed or came back mutilated. The war was accompanied by the destruction of economic entities, destroyed the cities, the population was annihilated, and destroyed trade routes. The negative consequences for economy of the war clearly outweigh the positive.

Many are convinced that military activity is inherent in human nature and is the inevitable companion of civilization. This is an error of judgment. Cooperation, team spirit is inherent in the biosocial genotype of species Homo Sapiens rather than confrontation and war. And the history of civilizations is primarily a history of constructive dialogue and cooperation, mutually beneficial exchange, periodically interrupted by wars.

The first and second world wars have shown a malignancy of wars to the civilization in which tens of millions of people were killed. The "cold war" and the military arms race put the planet to the brink of nuclear war in which there will be no winner. N. Moiseev has scientifically proved the inevitability of the "nuclear winter" and the destruction of humanity and the biosphere in a wide application of accumulated stockpiles of thermonuclear weapons. Awareness of it bythe state leaders initiated the process of nuclear disarmament.

Nevertheless, local wars constantly arise, the arms race continues. In 2014, military spending in the world amounted to 2.3% of world GDP, 27,207,000 million people served in the army, or 0.8% of the working population.

Is it possible to break the vicious circle of connection of the state, economy and wars? It seems that in the long term, this can be done, but one cannot try to solve the problem unilaterally and immediately. The bitter experience of Russia, which in 1990 sharply reduced the army and largely destroyed the military-industrial complex, has showed the harmfulness of such path both for the army, and the economy, and for the state. This has increased rather than reduced the risk of wars. One had to spend a great effort to restore the combat capability of the army and revive the military-industrial complex. And it gave Russia the opportunity to actively participate in the prevention and cessation of armed conflicts.

It is necessary along-termmutually agreed, underpinned by international treaties strategy of

ending the arms race, disarmament and prevention of armed conflicts. However, there are necessary ideas for the use of the huge military capabilities for peaceful purposes for the elimination of consequences of natural disasters, the assimilation of STR-21 achievements, etc.

Social State

The constitutions of many modern states contain a provision on the social character of the state. This corresponds to the general tendency of strengthening the social function of the state as one of the prime important public institutions. The social function of the modern state is realized in a number of areas of its activities. First, in the adoption of social legislation that guarantees the rights and freedoms of citizens, the opportunities to develop their abilities, and to protect their safety and property, etc.

Second, in the measures to support family, birth rates and having of many children, etc. Third, the labor law, the limitation of working day, determining days-off and holidays, ensuring safety, etc. Fourth, in health promotion, free and accessibility of basic health services, support for the disabled, etc. Fifth, the development of education, free secondary and a significant part of higher education, the possibility of getting additional education. Sixth, in the pension legislation, regulation of sizes of pensions and their indexation with an increase in prices, creating conditions for therapy and rest of pensioners. In different countries and civilizations the volume and structure of social services provided by the state may taper in times of crises, but the main tendency is their extension.

Control questions and tasks

1. What are the role and functions of the state in the development of civilizations, in ensuring interaction of all the components of their genotype?

2. When and why did the state appear? What is the relationship of its origin with the formation of economy and the first generation of local civilizations?

3. Name and comment on the change of generations of the states inearly-class, ancient, medieval, and market-capitalist epochs.

4. What determines the social structure of society and how does it relate to the political system and the functions of the state?

5. What is the difference between the eastern and western model of the state? Is it possible their unification, the transition to a single model?

6. Tell about the areas of interaction between economy and the state, and show via examples how this interaction takes place.

7. Describe the mechanisms of interaction between economy and power at different stages of the development of civilization.

8. Does the state will wither away in future society?

9. Is it necessary to introduce the study of the political economy of civilizations for civil servants of top and middle ranks?

CHAPTER 14. ECONOMY OF GLOBAL CIVILIZATION

Classical and Marxist political economy considered the system of economic relations in the framework of national economies and their relationships. And it is legitimate for the epoch when national economies were major players in the geo-economic arena. But from the last quarter of the 20thcentury as a result of globalization there was a qualitative leap: it formed a supranational global economy with its structure, regularities of development, institutions and mechanisms. And this should be the subject of a special section of the political economy of civilizations.

14.1. Global Economy: Contents, Structure, Regularities and Tendencies of Development

The Top of the Economic Pyramid

Traditionally, the textbooks on political economy and economics the economy is considered on two levels: micro-economy - economy of commodity producers and their relationships, and macro-economy - the national economy. Sometimes they added meso-economy (regional economy).

The political economy of civilizations examines the structure of economic relations as a multi-storey pyramid. Its base, the foundation is family household economy; it is here consumed 60% of world GDP and reproduced the main productive force of society - human labor. Home and personal labor household are out of the market, but it determines the amount and structure of consumer demand for the bulk of manufactured goods and services, the labor resources to produce these goods and services originate from them. Therefore, the family household economy deserves a more careful study and support.

The second floor is the economy of enterprises that produce goods and paid services, and organizations that create non-market services. This is economy of teams working for external market or to meet public needs, regardless of the form of ownership (private, collective, state, etc.).

The third floor is the economy of municipalities and regions in the national economy, with a common economic, ecological and social interests and the field of interaction. In the large-area countries, this level may itself be a three-story (for example, in Russia - the municipalities, the subjects of the Federation, the federal districts).

The fourth floor is the national economy of the sovereign states of different sizes – from such giants as China, India, USA, Russia, and Brazil with huge territories and hundreds of millions of people, to diminutive states in the size of one city or the island. They all have equal rights and common features related to the functions of the state in economy.

Now, however, over the national economy there are formed two more floors - the constituent elements of the global civilization. The fifth floor is the interstate integration associations such as the European Union, the Eurasian Economic Union, etc., to which the states voluntarily cede some of their economic functions. The greatest level of integration is achieved in the European Union, which is developing into a confederation of 28 European countries with common borders, a common currency, a common supranational regulation and other institutions. However, the level of centralization of these functions has proved excessive and the European

Union is going through a difficult period of transformation, especially in connection with the civilizational mistakes made. Finally, the top of the pyramid - the sixth floor is the global economy, which has its own structure, the regularities of development, institutions, and mechanisms. It is a new economic category that deserves special consideration. In conditions of the global crisis, it is also undergoing a period of transformation.

The Structure of the Global Economy

The global economy covers almost the entire populated territory, and almost the entire population of the world, except Antarctica. This is 193 states - members of the UN. The structure of the global economy is multifaceted. It differs by continents, major regions (South Asia, Middle East and North Africa, Eurozone), and civilizations (Latin America, Sub-Saharan Africa) etc.

The Institutions of the Global Economy

The global economy has its own institutions and functional and regional organizations (the UN with the General Assembly, Security Council, etc.). There are specialized organizations the International Monetary Fund, World Bank, WTO and other organizations by individual areas of activity (FAO, WHO, UNESCO, UNEP, WIPO and others.), funds (for example, the Global Environment Facility). In many ways they resemble institutes of national economies with the limitation of rights.

It has formed a global monetary-financial institution, based on the use of the dollar and other reserve currencies, with the world financial center, stock exchanges, speculative fluctuations in world prices, which have little to do with the real dynamics of the international value. Attempts of "Group of 20" to regularize and demoralize the international financial institutions have failed, because the United States did not ratify the agreements reached. Therefore, one has to shape in many ways anew the institutions of the global economy, consistent with the principles of the integral economic system, on the basis of the BRICS, SCO, EAEU, and other international unions of the rising civilizations and the leading powers.

The Regularities of Development of the Global Economy

The global economy as an economic mega-system of the global level develops by cyclically-genetic regularities, largely common to the regularities of development of national economies, but with important features. First of all, there stands its own development center, which determines the rhythm of cyclical fluctuations of the global economy. In the postwar decades, this was the center of the "triad" - the USA, Western Europe and Japan which concentrated most of the world GDP and development resources, and evens the amplitude of cyclical fluctuations of the global economy compared to the amplitude of the national economies and their groups. However, from the beginning of the 21st century the historical pendulum has swung from the West to the East, the center of development is moving to the rapidly growing economies of Asia - China, India, Indonesia, Vietnam, etc. And although in 2015-2016 these countries are faced with certain difficulties and a slowdown in growth rates, however the tendency of the movement of the center to the East is irreversible: it is here that it will be determined the rhythm and pace of the global economy development and the impact on them of the West and Japan will be falling.

Another feature of the global economy is that here it is more clearly than in the national economies, manifest themselves civilizational differences. It is underway the formation of the

group of the Western civilizations - Northern American, Western European, Eastern European, Oceanic, which will continue to maintain and support the institutions and features of the outgoing industrial, market-capitalist world civilization which in the decline phase. But at the same time it is being formed their divide with a group of the rising civilizations - Chinese, Indian, and Latin American. The Eurasian civilization where it is still prevailing capitalism with a "bubble economy" tends to it, the Muslim civilization with the contradictory tendencies and the African civilization torn apart by internal conflicts. Therefore, the features of the political economy of civilizations manifest themselves more fully on a global level.

The third regularity of the global economy is a growing polarization between countries with high and low income - in terms of GDP per capita, energy consumption and CO_2 emissions per capita, expenditure on health per capita. This becomes a clear manifestation of imperfection and doom of the late industrial economic system: on the one continent live as if two kinds of earthlings who are in different historical epochs, although the resources of the planet are common. In the transition to the integral economic system one will have to solve a difficult task to overcome this tendency. This is the aim of the Sustainable Development Goals for 2050 adopted in 2015 as well as a report on long-term sustainable development of civilizations, based on civilizational, noospheric and cyclically-genetic approaches, developed by SKII.

The proportions of the global economy are built on the "bubble economy" basis (the virtual capital"), are notable for high instability and unpredictability, especially in the context of global crises. In the establishment of the integral economic system a hard work is ahead to clear the global economy from the "bubbles" and the definition of an optimal level of globalization subject to interests of national states and their integration unions. This objective of extreme complexity will have to be solved by the leaders of the generation of 2020s in the second quarter of the 21st century, in the conditions of growing demographic, environmental, technical and geopolitical risks. In order to do so the leaders of the new generation will need to develop the foundations of the political economy of civilizations and optimization of the structure of the global economy.

14.2. Localization and Regional Integration Unions

The Tendency of Localization

Along with globalization and the establishment of the global economy it is going the localization process - the formation of dozens of interrelated economic integration associations and unions and formation of regional (inter-regional) economies. While in the post-war decades, the integration process had two forms at the opposite poles - in Western Europe the formation for half a century of the European Union, and in Eastern Europe the formation of the Council for Mutual Economic Assistance (CMEA), ceased to exist in the 1990s, then now there are many such associations with a different level of integration.

The principle of the closest integration is implemented in Western Europe with the transformation of the continent once boiling of contradictions and military conflicts into the area of partnership and formation of the Western European confederation. However, the EU leadership made two strategic errors. The first one: after the disintegration of the USSR and the Comecon it absorbed the eastern European civilization, the countries of Eastern Europe and the Baltic States with a different level and style of economic life were admitted to Europe. Thus, the uniformity of association was undermined, and the influx of migrants from Eastern Europe

flooded to Western European, and it is obviously not enough financial capacities to support and social development. In its political games acting on the United States suggestion the European Union tried to engage in its orbit the countries - representatives of the Eurasian civilization - Ukraine, Georgia and Moldova.

The second strategic error is also of civilizational character. As a result of the policy of multiculturalism pursued by the EU leaders, and in 2015-2016 - openness to refugees from the countries of the Muslim and African civilizations, millions of refugees rushed to the Western European countries, who create their enclaves to meet their civilizational features, requiring the application to them of the same system of social benefits and guarantees, which have been developed in Western Europe as a result of decades of hard labor and social transformations. As a result, the Western European civilization becomes mixed and it is growing a clash of civilizations not on the borders of their contact, in different states, but within the western European civilization. This leads to the destruction of not only the integration union created through hard work, but also the western European civilization itself, which might repeat the fate of the late Western Roman Empire, which gave the right to citizenship to the vast number of barbarians, opened the gates of the country to them, and as a result this civilization fell.

The integration union emerged on the territory of the former USSR as a result of the fall of the once-powerful single superpower as a result of disintegration processes into the 15 independent states, of which three (the Baltic states) joined the European Union and NATO. The rest formed the Commonwealth of Independent States (CIS), which, while taking the integration declarations, in fact, was engaged in "civilizational divorce", i.e. the process of disintegration, which gradually increased.

The reverse tendency found expression in the establishment of the Eurasian Economic Community, then the Customs Union, which in 2015 was reformed into the Eurasian Economic Union (EAEU). However, it proved to be extremely difficult to create a coherent, particularly under sanctions against Russia and an economic crisis that hit hard Russia and Kazakhstan. In addition, under the influence of the neo-liberal ideas prevailing in the economic block of the Russian government the matter was reduced to the arrangement of customs borders, there were not laid the scientific and technological bases of raising the competitiveness. From its inception, the EAEU found itself under a severe blow, drastically reduced the bilateral trade and trade with the third countries.

14.3. National Economies in the Globalized World

Globalization and localization processes change the position of national economies, which until the last quarter of the 20th century were the main players in the geopolitical arena, the stronghold of national sovereignty.

The medieval civilization was characterized by feudal fragmentation not only of power, but also the economy. The predominant type of national economies was the semi-subsistence productions with local markets, which are communicated with each other through the trade routes - the river or sea. The establishment of the capitalist market-type economy in the period of early industrial civilization and its triumphant march in the period of the industrial civilization began with the formation of the world market on the basis of the Great Geographical Discoveries. Modern heirs are the integration economies the European Union type.

Progressive tendencies in the formation of a unified nation-state economies characterized the 19th century. However, in the 20th century the reverse tendency prevailed - to the fragmentation of empires and the rapid growth of the number of national economies. This trend resulted in two waves of disintegration. The first wave - after the First World War, when on the basis of the Austro-Hungarian, Ottoman and Russian empires, a number of independent states appeared. After World War II it was the second wave of disintegration as a result of the fall of the British and other empires. The third wave was observed in the 1990s after the fall of the USSR and Yugoslavia. The process of disintegration, though more weak, will continue, and by the middle of the 21st century the number of states (recognized and unrecognized) and, consequently, national economies will increase, probably up to 250 or more.

The National Economies in the World of Civilizations

The matter is not only in the increase of the number of national economies. Their opportunities and functions in the world of civilizations change. On the one hand, some of the functions as a result of disintegration will change to regional and interregional organizations. On the other hand, some of the functions will be transferred to the supranational level - the integration unions on the basis of regulation of the global economy.

This objectively conditioned process has both positive and negative sides. Positive - it appears an option to make better use of labor, natural, scientific and technological resources on the basis of the international division of labor, to enact the integration factor of efficiency growth. National economies will persist and will occupy their niche in the integral economy of the 21st century. At the same time their activities are more and more focused on the preservation of national and civilizational economic, scientific, cultural and natural heritage, and on the support of balance and security under inter-ethnic and inter-civilizational flow of migrants, on solving social problems, etc. At the same time it will be excluded the option for the emergence of new totalitarian states. The negative tendencies are in scattering of forces and weakening the opportunities of national economies to pursue socio-economic, scientific-technological and ecological policy.

Control questions and tasks

1. Why and when did the global economy emerge? Show its differences from national economies.

2. Tell the main contradictions associated with the now prevailing globalization by the neoliberal model. How to resolve these contradictions?

3. What are the processes of regulation and self-regulation in the global economy? Is it possible planned-market mechanism here?

4. Why is it developing a process of localization and integration in the regional economies? Show their features and differences by the example of the European Union and the Eurasian Economic Union.

5. How do the role and functions of national economies change in the context of globalization and localization? Show it by example.

6. Draw a pyramid of economic levels of the global economy in the 21st century.

CHAPTER 15. THE ESTABLISHMENT OF THE INTEGRAL ECONOMIC SYSTEM

Homo Sapiens differs from all other living beings in that knowing the regularities and tendencies of the past and the present, he builds the image of the possible desired future and consciously aspires to it, with more or less effort building his future. The image of the future can act in three ways. Either preservation of the now existing system - the conservative forces eager for it. Or to create a new, more just society- the progresses forces aim to it. Or return to the past times, which seem the "golden age" – the reactionary forces are trying to do it. From the confrontation of these three forces, which is exacerbated in the transition periods of history, it develops a real trajectory of historical motion slow, fast forward or zigzag. It is in such transitional epoch the humanity of the global civilization entered at the end of the 20th century.

15.1. The Economy of the Transitional Epoch

The Epoch of the Historical Fault

From the second half of the 19th century it became apparent that capitalism triumphed in the vanguard countries carries contradictions in it leading to its replacement by another system. K. Marx and F. Engels in the "Communist Manifesto" proclaimed communism the ideal of the future, realizing the ideas of "Utopia" of T. Moro (1516), and laid the foundations of scientific communism. The anarchists led by M. Bakunin and P. Kropotkin saw the ideal of the future in return to a society without a state. However, most scientists saw in capitalism, market-capitalist system that ideal that should be maintained, somewhat improve its separate sides.

In Russia (the USSR), and after World War II in China, a number of countries in Eastern Europe and even in Latin America (Cuba) began to implement and to build a communist society, its first stage - socialism in one or another option. Fascism established after the global crisis of 1929-1933 in Germany then swept almost all Western and Eastern Europe attacked the USSR, to establish the medieval system throughout the Eurasian continent. The USA, the UK and countries followed them advocated the preservation of the capitalist system in its state-monopoly variant. The reactionary forces were defeated.

In the post-war decades there was formed the bipolar world with the confrontation between capitalism losing its positions and socialism gaining strength in two versions - Soviet and Chinese. The confrontation between the two systems lasted nearly half a century. But from the 1990s, it ended in the disintegration of the USSR and the world system of socialism.

It seemed that socialism was defeated and capitalism triumphed forever in its northern American, western European and Japanese versions. However, socialism in its Chinese version ("market socialism") is not only preserved, but also showed a record growth rate from the end of 1970, fascinating other countries.

The Soviet version of socialism was defeated, but its ideas continued to spread throughout the world. In place of the ideas of scientific communism there come the ideas of the noospheric civilization and integral humanistic socio-cultural system. V. Vernadsky and N. Moiseev have formulated the ideal of a future society, harmoniously developing in accord with nature. P. Sorokin has substantiated the ideal of the integral socio-cultural system which incorporates the best features of capitalism and socialism, but eliminated their disadvantages. V. Vernadsky and

N. Moiseev have supplemented these ideas with the doctrine of noosphere, the sphere of mind, harmonious co-evolution of nature and society. The modern Russian civilizational school have synthesized these two visions of the future into the theory of the establishment of integral, humanistically noospheric world civilization with its inherent integral economic system.

The conservative version of maintaining the yet prevailing economic system of the late industrial economic system degenerated into a "bubble economy", represented in the ideology of neoliberalism, collapsed under the blows of the world crisis of 2008-2009. The reactionary ideal gets flesh and blood in the form of ideas of world Caliphate, ISIS, a return to the worst modifications of the medieval society.

From the end of the 20th century it formed a new geo-civilizational divide with two poles: the rising civilizations and powers led by the BRICS and China, which lay the foundations of the integral civilization and multipolar world order on the basis of dialogue and partnership of civilizations and states; and the descending civilizations and the leading powers headed by the USA, "Group of 7" and NATO - a powerful bastion of the industrial civilization and market-capitalist system with its globalized "economy of bubbles" outgoing from the historical arena[1]. But there is a field of partnership of the progressive and conservative forces in the struggle against the reactionary forces represented by the ISIS, international terrorism, and religious fanaticism.

The Stages of the Evolving Integral Economy

The path of the formation of the integral society and the economic system adequate to it is not scattered with roses but with thorns. Time is ripe for severe trials, which will continue, probably until 2020, if not until 2025. Then it will begin the transition to a rising wave of the seventh civilizational and sixth Kondratieff cycles. In the second quarter of the century the integral civilization and the economic system adequate to it will establish themselves in the rising civilizations and the leading countries. The center of civilizational activity will shift to the east, and the descending civilizations of the West and Japan will have to give up the dream of keeping their dictate and to engage seriously in transforming its socio-economic system. It is hard times ahead for the USA with an imminent fall of the dollar pyramid in future and a huge external debt. Not less complex changes are ahead for Western Europe in connection with the internal civilizational crisis due to an excessive influx of representatives of other civilizations, especially Muslim. Western Europe will increasingly be transformed into a mixed civilization. The Japanese civilization has entered a phase of stagnation.

But also severe trials are ahead for the rising civilizations. China fell into three traps: the demographic due to depopulation and the coming shortage of labor, ecological due to excessive pollution of the environment and the investment due to capital over-accumulation, which reached 49% of GDP in 2013. It will have to form a more cost-effective and balanced development model. The largest mega-project of the 21st - the Silk Road Economic Belt-is aimed at solving these problems. India will face with a low standard of living, inadequate scientific and technological potential, high population growth rates that require solving the problem of

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[1] *Yakovets Yu.V.* The New Geo-Civilizational Divide and Prospects of the BRICS // The Partnership of Civilizations. 2014. No. 3-4; The Prospects and Strategic Priorities for the Rise of the BRICS. M.: SKII NKI-BRICS. M.: INES 2014; The Global Economic Transformations of the 21st Century. M.: Ekonomika, 2011.

employment and the eradication of illiteracy. Russia will have to abandon the protracted neoliberal development model to overcome the dichotomy of fuel and raw material relations in economy and embark on the path of innovative-technological breakthrough, overcoming depopulation and excessive gap between rich and poor. Brazil and other Latin American countries also experience difficulties on the path towards sustainable economic growth.

It can be expected that these transformations of the global economy will take the second quarter of the 21st century, and by the mid-century the integral economic system will become prevailing in the world, engaging into its orbit the lagging countries with the participation of the United Nations.

15.2. The Main Contours of the Integral Economic System

The Variety of Forms of the Integral System

In society there is no uniformity. Each civilization and country, each social stratum and each generation, each epoch and each cycle is unique and inimitable. But among this diversity there are visible some common features, which will permit to draw parallels and generalizations. In this is the sense of logical thinking, the importance of science.

The above fully applies to the integral socio-cultural system taking shape in the transitional period. P. Sorokin warned that this system will have its own varieties in the East and the West. But these varieties will be much more - in each of the group of local civilizations (Europe, America and Oceania, Asia, Africa) and in each country. This is due to differences in the systems of civilizational values, historical experience, the relation of social forces, and the interaction with neighbors. One can highlight some key common features that characterize the essence of the integral economic system, to various extents inherent in all civilizations and countries, reaching a new stage of civilization development, and these features are not invented, they are already at the initial stage of development in the vanguard countries. Let us summarize these main features that distinguish the integral system from the previous stages of the economic development of civilizations.

Humanized Economy

The main distinctive feature of the integral economy is in its social orientation, comprehensive humanization. Unlike the market-capitalist economic system oriented to profit maximization, where man becomes the prime source and tool for generating profit, and for the sake of super-profits the entrepreneur is ready to do any crimes, in the integral economy, the end goal is to raise the standards and quality of living, the all-round development of abilities of man and their use for the common good. A. Storch called it national welfare.

This feature should find its expression in proportions and mechanism of economic development. First, the priority importance and faster development of consumer reproductive sector of economy - agriculture, light and food industry, social services, sphere of spiritual reproduction (science, education, culture), overcoming poverty and hunger in the world, the elimination of the gap between richness and poverty - both within national economies and globally. Second, the pursuance of an active socio-demographic policy, overcoming depopulation, optimization of migration flows, reducing to an absolute minimum of unemployment, creation of favorable conditions for the promotion of health, gender equality, adequate living standards for the elderly population, and the accessibility of education for all.

Third, the principle of the social state, embodied in the constitutions of many countries, should be also extended to supranational structures - regional integration associations, unions, global international organizations, the UN. The subjects of the social function should be the states with low-income, migrant flows and other socially significant categories. It cannot be considered normal, when the gap between high-income countries (1,300 million people) and low-income countries (850 million people) in 2013 amounted to 55 times by income per capita (21 times in PPP terms), health-care spending 130 times per capita (in 55 times in PPP terms)[1].

In Sustainable Development Goals for 2030, adopted at the UN Summit in September 2015, it is planned to eradicate hunger and poverty in the world, to carry out other measures of a social nature. It is necessary to supplement these goals with the development of a global program providing comprehensive assistance to low-income countries to reduce their lagging in several times for 2030.

"Green Economy"

A common feature of the integral economic system should become an ecological orientation, saving the world resources and environment for future generations, ensuring the harmonious co-evolution of society and nature. This global objective can be solved only through joint efforts of all civilizations, but each of them must take its place in its solution. This becomes especially important under an increasing energy-ecological crisis of civilizational and adverse climate changes, natural disasters and the growing damage caused by them. At the United Nations Conference on Sustainable Development Rio + 20 in 2012, as the central problem was posed the transition to "green", environmentally friendly economy. This should be reflected in specific steps.

First, in the formation of the noospheric natural-ecological mode of production and consumption oriented towards conservation and multipleuse of natural resources, taking into account the interests of future generations, for the implementation of the ecological imperative formulated by N. Moiseev.

Second, in a large-scale replacement of fossil fuels, mineral raw materials with renewable sources of energy and materials. It cannot be considered normal that for a quarter of a century, energy consumption in the world increased in 1.5 times, and the fossil fuel share increased to 81%. The modern economy is living on credit from future generations, leaving them empty depths, deforestation, fresh water scarcity, and air pollution.

Thirdly, it is necessary to cast off the illusion of the free-of-charge basis of natural resources and use of the environment. Society has to spend an increasing proportion of social labor for exploration, forestry, water management and fisheries, land reclamation, removal of environmental pollution, recycling of industrial and household waste. All resources and all the damage should be given a reasonable economic assessment. It is necessary a global mechanism of assessment and distribution of rent and with drawal of anti-rent. It will encourage and become a lever for the transition to "green" economy.

Innovative Economy

In the long term, the world economy awaits strengthening of demographic and

[1]2015 The World Development Indicators. The World Bank, Tables 1.1, 2.15. Washington, 2015.

environmental constraints of the economic growth - the fall of the rate of growth, and then a reduction in the working population and an increase in the demographic load on working due to the aging of the population, rise in the cost of natural resources, the growth of labor costs and social costs. This encourages a tendency to fall in economic growth rates. T. Piketty predicts that in 2100 perspective and even in 2200 the world average GDP growth rate will drop to 1.5-1% of annual average[1]. But with an increase in the share of natural-ecological costs and increasing population, this means that it will not be enough resources for the innovative renewal of fixed capital, economy will degrade.

A key factor of the economic growth becomes scientific and technological progress, timely large-scale renewal of fixed capital in all sectors based on new generations of equipment of the sixth technological order. To this end, a high share of fixed capital accumulation fund should be maintained, rising in the periods of crisis recovery on the basis of a wave of basic innovations, especially in countries where it is necessary to overcome the technological lag.

It is needed a mechanism of innovative partnership of science and education, state and business for the development and dissemination of new generations of technology. The state should take on it the support of faster development of science for the formation of a wave of scientific discoveries and significant inventions that underlie basic and improving innovations. It also requires the government support for basic innovations, which then become the basis for a wave of improving innovations implemented by business and providing the acceleration of economic growth. The objective of economy of innovations is to identify specific areas of a continuous wave-like innovation development, innovation renewal and achievement of a relatively sustainable economic growth, for support of the lagging countries so that no technological gulf arises between the vanguard and lagging economies. This is the essence of the innovation economy.

Mixed Economy

Misconception that the integral economy will be uniform-state or uniform-private. It will be inevitably mixed, with optimal proportions and cooperation to achieve common goals. This is dictated primarily by the terms of reproduction, the resources used and forms of the links between producers and consumers of the products of labor. Natural resources, the basic strategic facilities, non-market sector of economy (science, education, culture, ecology, defense, public administration, and security) should be state-owned. At the same time, the production and the distribution of millions of kinds of specific goods and paid services for tens of millions of consumers more effectively operates on the basis of private property under state control. It should also ensure the conditions for fair competition.

In the integral economic system there will be no place for the "bubble economy."The financial and credit mechanism should perform its natural role to the extent required for the functioning of social reproduction and accumulation, and the prices should reflect the real balance of socially necessary labor costs taking into account the quality of goods and services.

Every economic system should occupy its niche in the system of social reproduction and effectively perform its functions under control of civil society and the state. And not only at

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[1] *Piketty T.* Capital in the Twenty-First Century. M: Ad Marginum Press, 2015.

national but also at the global level, as a transnational order really exists, and its role in the context of globalization and strengthening of the international division of labor increases. It lies ahead to get rid of the one-sidedness of national and international economic organizations (International Monetary Fund, World Bank, WTO), which are now focused on the interests of the countries of the "golden billion" and TNC, and enhance the UN's role in forecasting, strategic planning and regulation of development of the global economy.

Planned-Market Economy

The integral economy is seen like planned-market, in accordance with the formula proposed by W. Leontief: the market competition vector inflates "sails" of the economic ship, but the steering wheel must be firmly held in the hands of the state, directing the ship in the right direction.

The planned-market regulation mechanism of economic dynamics and functioning of economy was first substantiated in Soviet Russia during the NEP. An attempt was made to resuscitate it during the Kosygin reform. But the most successful example of its effective use has become a "market socialism" in China, then in Vietnam. Similar mechanisms are used in the countries of state-monopoly capitalism. The most important economic functions are fixed with the state:

✓ identification of the rates and proportions of development of economy in the long and medium term;

✓ a choice and implementation of strategic breakthroughs;

✓ ensuring proportional development of the non-market sector of economy, which share will grow;

✓ establishment of the legal framework for the effective regulation of the market sector of economy, particularly in crisis situations;

✓ substantiation of mutually beneficial interstate economic relations.

At the same time it should be provided optimal conditions for functioning and development of the market sector of economy based on free competition between producers and consumers of millions of goods and paid services under harsh suppression of monopolism and abuses. Only in the synthesis of the plan and the market, with the optimal combination and assistance of mechanisms inherent in them one can ensure the effective development of economy.

15.3. The Revival of Basic Market Categories

As a result of the decay of market-capitalist system at the decline of the industrial economic system the basic market categories - commodities, money, prices - no longer perform the functions meant for them and turned into virtual signs used by TNCs for the redistribution of income in their favor. The achievement of the Sustainable Development Goals adopted in 2015 and moreover the transition to the integral economic system, humanistically noospheric civilization is impossible without bring back to life these categories, the return of their inherent meaning.

Cleaning Up the Commodity World

First of all it is necessary to clean up the commodity world from virtual money and counterfeit. Commodities must be necessary, valuable, useful for man and society material goods and services, rather than conventional money - material for the construction of financial pyramids, and "bubbles." This will require a radical change in the work of stock and commodity exchanges: real values shall be exchanged there. This will require adopting an international agreement worked out by independent scientists and supported by the UN. This proposal might seem utopian, the clubs of billionaires and governments of the "golden billion" countries will act against it. But one must clearly understand that the further development of this virtual world of dual values will lead to the collapse of the world economy.

Another area is clearing up from the counterfeit products that bring harm to health products and services - from pharmaceuticals, substandard food, drugs, etc. Millions of people suffer from such goods and services. And this will require international and national agreements and laws, the transformation of WTO, national customs and tax authorities in powerful institutions to combat the counterfeit for the effective protection of health and consumers' interests. In the first place the problem of drug eradication requires solution that claims lives today not less than international terrorism. This should be one of the prime important goals of sustainable development.

Putting the Prices Back on a Sound Footing and Their Regulation

The revivification of the market is impossible without price rehabilitation, return true functions to them – unit of account of real value and use value of commodities and paid services, the efficiency of the market and investment activities, strategies, projects and solutions taken and implemented. This is the only way for the world and national economies to be able to get out of "the kingdom of crooked mirrors" in the real world of economy, serving the interests of people and society.

Various measures are required to implement this challenging task. Let us mention a few. First, the development and after the worldwide discussion, adoption of the report on the system of price-determining means and world prices adopted for basic commodities and services prepared by a group of recognized and independent scientists. A matter of high priority seems the preparation of such report on the world prices for basic energy; this proposal was made by SKII at the 10th Civilizational Forum in Moscow, October 26, 2015.Second, the approval of such report and an international agreement made on its basis, on the core principles and methods of formation of world prices for basic commodities and services. There can be more than one such agreement - for food, pharmaceutics, etc. Third, the establishment, at the United Nations or under its auspices, of international bodies or organizations that would carry out the implementation of such agreement and the monitoring of its implementation. At the 10th Civilizational Forum it was proposed to establish on the basis of the BRICS, SCO, and EAEU the International Energy Organization under the aegis of the United Nations (now there is no such organization in the United Nations, it uses the services of the International Energy Agency, which represents the interests of the "golden billion" countries).

Drastic measures are necessary to ensure transition from the current economy to economy of healthy demand, based on the original prices, and not on "bubble economy" painted with bright colors. And the generation of the 2020s will have to tackle this problem, and if they fail to

cope with it, by the leaders of the next generation, the 2050s, if the global economy survive to this time. However, usually the mankind, while at the brink of a precipice, finds the strength to move away from this brink. Let us hope that it will also be so at this time, and the motion logic to a new turn of spiral of civilizational development will prevail. To do so the political economy of civilizations will be in-demand.

15.4. Stages and the Driving Forces of the Formation of the Integral Economic System

The Future Exists in the Present

As it can be seen from the above list of the main features of the integral economic system, there is nothing fancy about them. Moreover, these features have already been tested for decades, in one way or another exist in different countries and civilizations, grow and intensify in economy, especially in the rising, countries and civilizations, the most in China, which in many respects is a model of the formation of the integral economy, albeit with Chinese specifics and certain restrictions.

At the same time it is obvious that by the method of trial and error, it is impossible to realize the transition to the integral economic system or this transition will take too long period, be overburdened with risks and losses, crises and disasters for hundreds of millions of people, as is the case at the beginning of the 21st century. It will be necessary to create a clear, attractive and at the same time realistic ideal of a future society and consolidate the social forces that can persistently make the transition to it, overcoming many obstacles on this thorny path.

The Ideal of the Future Society

The first step in forming the image of the future society has already been made by K. Marx who observed that the worst architect differs from the very beginning from the best of bees that such architect has already built a cell from wax in his head before to build it.

from the outset is characterized in that, before building a cell in wax, he has built it in his head.

The study of the historical experience shows that in periods of civilizational crises they are usually born great utopia that grip the masses, especially young people on the path of realization of this ideal. And although the society so built is usually very far from this ideal, however, it marks a real progress of civilizations. So it was with the great utopias of Confucius and Plato during the formation of the ancient civilization (the 7th – 4th B.C.), the spread of the ideas of Christianity, and then Islam in the period of crisis of ancient and the formation of the medieval civilizations. Almost 500 years ago, there was born great "Utopia" of T. More and "The City of the Sun" of T. Campanella, whose ideas were sought-after by the utopian socialists of the 17th – 19th centuries in the formation of the great utopia of scientific communism of K. Marx and F. Engels.

The current civilizational crisis of the end of the 20th– beginning of the 21st century was preceded by the birth of the great utopias of P. Sorokin on the integral socio-cultural system, implementing the unity of Truth (science), Goodness (humanistic ethics) and Beauty (high culture), and the doctrine of V. Vernadsky and N. Moiseev about the transformation of the biosphere into the noosphere, a harmonious co-evolution of society and nature. The modern Russian civilizational school has synthesized these two great utopias into the theory of the

formation of the integral, humanistically noospheric civilization. The Political Economy of civilizations is a part of this theory, which can become a scientific basis of innovations in the 21st century.

The Role of a New Generation

Now the matter depends on the image of the future society becomes available, and gripa new generation, for it is that it will become a creative force that will create the integral civilization. The law of generational change will contribute to it. The generation of the 1990swhich is largely initiated the current crisis and could not cope with him, completes the period of its dominance. Leadership passes to the generation of the 2020s, whose historical mission is to overcome the crisis and to lay the foundations of the integral civilization and the economic system adequate to it.

Leaders of the generation of the 2020s are ready to take decisive action and drastic changes, for the blow of crisis and mass unemployment fell to this generation. But they have a weak fundamental educational training. In rejecting the capitalist system, they do not know by what to replace it. Some leaders rush under the black banners of ISIS. Others - and their most - try to preserve the old order, and improve it. And only a small part of leaders is ready to receive the ideal of integral, humanistically noospheric society. The duty of progressive scientists is to help them in it. Then a new generation will be able to fulfill its historic mission.

Control questions and tasks

1. Do you agree with the thesis that the market-capitalist economic system has exhausted its potential for development and should be replaced with a higher system? Argue your answer.

2. Are there already present elements of a future integral economic system and how they manifest themselves?

3. What are the stages of the formation of the integral economic system in the vanguard, catching-up and lagging countries? Which of these groups include Russia?

4. Draw a chart that characterizes the main contours (signs) of the integral economic system and the relationship of these categories.

5. What is the role of the new generation in overcoming the crisis and the formation of a new economic system? What should be done so that it will fulfil its historic mission?

6. Do you support the proposal to revive the basic market categories as commodities, money, prices? Argue your answer.

AFTERWORD

We are completing a long journey through the vast range of problems of modern political economy of civilizations - the science of the categories, the regularities and mechanisms of functioning and development of economy and its interaction with the state and other elements of the genotype of civilization (the elements of civilization by A. Storch). Political economy originated about 2.5 thousand years ago on the crest of a great scientific revolution of the ancient world in its midst - Ancient Greek civilization. The birth of political economy as a science took place 400 years ago in France, and 240 years ago in Great Britain. A. Smith laid the foundations of classical political economy as the science of market-capitalist economy. This branch of scientific knowledge went its way together with the stages of development of this economy and is now under threat of ousting to the historical archive of the shortsighted economics now prevailing in the West.

At the beginning of the 21st century it came the time for revival of political economy - in an updated form, as an essential part of an integral social science paradigm that meets the changing conditions of functioning and development of economy and society. Science cannot but change together with its object. Society of the 21st century is a world of civilizations, where human with his more organic interaction with Mother Nature comes again to the fore again leaves man in its more organic interaction with Mother Nature. And it defines the content of a new spiral turn of the development of political economy.

It is not without reason the epicenter of the nascence of the updated political economy is in Russia. It is not only because 200 years ago there were laid the foundations of political economy covering not only market-capitalist economy, but also the internal benefits - the elements of civilization, existing and developing not by market, and all more the so not by the capitalist laws studied by Adam Smith, David Ricardo and Karl Marx. And not only because Russia is in the epicenter of modern civilizational crisis, and the crisis encourages thinkers to look for answers to the new challenges of the transitional epoch.

The main thing is in the other. Russia is the successor of the great ancient Greek civilization, where the priority was given to spiritual values (unlike the West, whose deep historical roots is in the Roman civilization with its priority of material values and market). That's why 200 years ago the world's first work on the theory of civilizations was published in Russian - "The Course of Political Economy" by A. Storch, the second part of which is called - "The Theory of Civilizations." It became the starting point for the emergence of a new social science - *civiliography*, the formation of which completes the modern Russian civilizational school. The political economy of civilizations is being formed as an interdisciplinary science, in an indissoluble unity and interaction with civiliography, macrosociology, history, political science and culturology. It occupies a central place in the renewed paradigm of social science. And it requires a breadth of horizon and depth of knowledge.

Political economy has been enriched with new knowledge and research tools that were not available during the period of the nascence of classical political economy. First of all, it is the concept of economic statics, dynamics and genetics, integral theory of cycles, crises and innovations at the heart of the updated transformations, a change of the long-term and super long-term civilizational and economic cycles, and the doctrine of the noosphere.

This is new understanding of the stages of economic evolution and the close relationship of the market and non-market sectors of economy, regularities and tendencies of development and modern degeneration of the market-capitalist economy that has turned into a "bubble economy." This understanding of the complex mechanisms of interaction between the economic component of the genotype of civilization with other components – socio-demographic, natural-ecological, technological, socio-cultural, and socio-political. This is clarification of the regularities and tendencies of the establishment of the integral economic system as an essential part of the *civilizational revolution of the 21st century,* the result of which will be the formation of the integral, humanistically noospheric civilization and its component part - the integral economic system on the planet. It will be the embodiment of the great utopias of P. Sorokin and V. Vernadsky (if one can avoid the threat of a clash of civilizations and global ecological catastrophe).

Unlike the pragmatic economics, political economy of civilizations is based on the historical optimism. It is not faith in a brighter future, or God-given paradise on the Earth, but a science-based conclusion about the laws of human evolution and society for the millennial way of formation and development of civilizations, about the general upward trend, despite the many twists on this thorny path. The laws of economic dynamics and socio-genetics, the law of generational change lie at the heart of the innovative renewal of society and its interaction with nature and at the heart of historical optimism. Optimism is also built on a generalization of the elements of the future society really existing in the vanguard countries.

Thus, the new knowledge is gained, although its development and updating will continue. Now we need to make it available to scientists and educators, the leaders of the new generation who are to take and implement strategic decisions that determine the fate of humanity in the historical period of the fault, change of civilizational cycles. This book is written to this end. In December 2015, the foundations of the political economy of civilizations were presented at the 35th Interdisciplinary discussion in Moscow.

I am convinced that sooner or later it will come the recognition of a new metamorphosis of one of the oldest social sciences. And again, the law will be implemented, unambiguously formulated by K. Marx: ideas become a material force when they grip the masses.

Appendix. A LONG LIFE IN SCIENCE

Yu. V. Yakovets has made a contribution to the development of interdisciplinary researches in the following areas:

- theory, history and future of civilizations;
- unified theory of cycles, crises and innovations;
- development and updating of political economy;
- theory and methodology of integral macro-forecasting;
- theory and methodology of pricing.

1. Theory, History and Future of Civilizations

Yu. V. Yakovets received and developed the basic ideas of the theory and history of civilizations laid by Andrej Storch, François Guizot, Nicholas Danilevsky, Oswald Spengler, Arnold Toynbee, Pitirim Sorokin, Fernand Braudel, and stood at the origins of a new branch of the social sciences - civiliography.

In 1992, at the International scientific conference in Moscow dedicated to the 100th birth anniversary of Nikolai Kondratieff, Yuri Yakovets spoke on "The Formation of the Post-Industrial Civilization" where it was substantiated the advantages of a civilizational approach to the history and future of society compared with the formation approach, proposed a new classification of the history of world civilizations and historical super-cycles in dynamics of the global civilization.

The monograph "At the Origins of a New Civilization" published in 1993 in Russian and English and presented at the World Congress of Futures Studies, developed these ideas and laid the fundamentals of a new approach to the theory and history of civilizations. These approaches were taken further in “The History of Civilizations” published in 1995 (in 1997 - the 2nd edition), where also addressed three stages in the history of civilizations in compliance with historical super-cycles. To forecast the future of civilizations it is applied the civilizational-reproductive-cyclical macro-model. In 2000, the US publisher Edwin Mellen Press published a monograph «The Past and the Future of Civilizations» where it is considered the interaction of local civilizations. In 2001, a monograph "Globalization and the Interaction of Civilizations" (in 2003 - 2nd edition) was published where it is researched into the influence of globalization processes on the dynamics and interaction of civilizations, put forward a point on the formation of a new generation of local civilizations.

In 2006, it was published a fundamental scientific work of B.N. Kuzyk and Yu.V. Yakovets "Civilizations: Theory, History, Dialogue and the Future" in two volumes, presented in 2006 at the UN headquarters, and in 2007 - at the UNESCO headquarters. The monograph outlines the basic issues of the development of the theory of civilization, the basic content of the modern theory of civilizations, civilizational cycles and crises, civilizational socio-genetics, content and development of the components of the genotype of civilizations, represents the milestones of the history of world and local civilizations, substantiates scenarios of the future of civilizations in the 21st century and gives the results of geocivilizational measurements.

In 2005-2007, in collaboration with B.N. Kuzyk three expeditions were conducted, the

outputs of which are given in monographs of B.N. Kuzyk and Yu.V. Yakovets "The Northern Black Sea Region As the Space of Interaction of Civilizations" and "The Origins and the Highlights of the Eastern Slavic Civilization." These works give a new look at the civilizational process in the Eurasian space. It was published the Global Forecast "Future of Civilizations" for 2050. This unique outlook was highly appreciated at the UN.

In 2012, the book "Arctic Civilization: Peculiarities, Historical Roots, Perspectives" was published and received an assessment as a scientific discovery in the social sciences (diplomas awarded to U.A. Vinokurova and Yu.V Yakovets in 2014).

On the basis of researches carried out in 2008-2009 the scientists from Russia, Kazakhstan and other countries under the guidance of Yu. Yakovets developed and presented at the UN headquarters the scientific reports "The Foundations of a Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations" (presented at the UN Headquarters in June 2011, at the United Nations Conference on Sustainable Development RIO+20 in June 2012), "The Scientific Foundations for Surmounting Civilizational Crisis and Entering the Path of Global Sustainable Development" (presented at the G-20 Summit in St. Petersburg in 2013), "Prospects and Strategic Priorities for the Rise of the BRICS" (to the BRICS Summit in Ufa in July 2015), the scientific report "About the System of Long-term Goals for Sustainable Development of Civilizations" (in elaboration of the Goals for sustainable development adopted in September 2015). In 2015, it was published a report Yu. Yakovets "The Muslim World in the World of Civilizations".

To spread the ideas of the Russian civilizational school it was drawn up the Program for civilizational education of leaders of new generation; in 2012, it was established the Open University of the Dialogue of Civilizations and an international scientific and educational journal "The Partnership of Civilizations" appears. The textbooks were published featuring B.N. Kuzyk, Yu.V. Yakovets "The Past and the Future of Civilizations " (2008, in Russian, English and Arabic), Yu. V. Yakovets "The Strategy for Global Sustainable Development Based on Partnership of Civilizations" (2012), Yu. V. Yakovets, S. Farah "Dialogue and Partnership of Civilizations" (with a foreword by Sergey Lavrov, published in Russian, English and Arabic in 2015), U.A. Vinokurova and Yu.V. Yakovets "The Arctic Circumpolar Civilization" (in Russian and English, 2015), Yu.V.Yakovts, V.I. Kruzhalina et.al. "Civilizational Tourism" (2016).

Yu. V. Yakovets became one of the founders of a new branch of the social studies - civiliography, which promotes the formation of a new paradigm of social sciences and the development of the Strategy for global sustainable development on the basis of dialogue and partnership of civilizations.

2. The Unified Theory of Cycles, Crises and Innovations

Yu.V. Yakovets has led the modern scientific school of cyclicism, developing the ideas of Mikhail Tugan-Baranovsky, Alexander Bogdanov, Nikolai Kondratieff, Simon Kuznets, Joseph Schumpeter, and Gerhard Mensch.

In 1978, the monograph "The Economic Mechanism for Improving the Efficiency of Production" laid the ideas of scientific-technical cycles and taking them into account in pricing and planning practice. In 1984, there was published the monograph "Regularities of Scientific and Technological Progress and Its Planned Use" (translated and published in the GDR and Czechoslovakia). The monograph substantiated a system of regularities of cyclical dynamics of

science, technology, education, organizational and economic systems, dealt with the analysis of scientific, technical and scientific-technical revolution, the emergence of a new technological order at the end of the twentieth century. The monograph was recognized a scientific discovery in the field of social sciences, a diploma awarded in 2001. The main ideas of the monograph were further developed in the book "The acceleration of Scientific and Technical Progress: Theory and Economic Mechanism" (1987), where there were presented the ideas of cyclical dynamics of scientific discoveries and inventions, innovative ecological cycles, substantiated the methodology for program-goal planning of scientific and technical progress.

In the context of civilizational crisis in Russia the focus of attention was shifted to the theory of crises. In 1991, at the 4th Interdisciplinary discussion a report "The Methodological Recommendations on Forecasting of Crises and Ways Out of Them" was made, where it is given the classification of crises and formulated a block diagram of forecasting of crises and ways to surmount them. In 1999, there was published a monograph "Cycles, Crises, Forecasts" where it was presented a modern theory of cycles and crises, based on the general theory of crises of dynamics of social systems of Alexander Bogdanov, the theory of industrial crises of Mikhail Tugan-Baranovsky and works of Nikolai Kondratieff and other scientists on the theory of crises. In 2003, there was published a brochure "Economic Crises: Theory, Tendencies and Prospects" in Russian and English; in 2013, the report “Scientific Bases of Overcoming Civilizational Crises and Entering the Path of Global Sustainable Development" was published; in 2014, the book "Dialogues on Regularities and Ways out of Crises” was published.

In 2000s, much attention was paid to the development of the theory and strategy of innovations as the main way out of the crisis. In 2004, the monograph “The Epochal Innovations of the 21st Century" (translated into English) was published which gives the substantiation of the theory of innovations in the pace of cyclical dynamics of economy and society and expounds the point of S. Kuznets about epochal innovations that contribute to overcoming civilizational crises and the formation of the foundations of a new civilization. In 2004, it was published a fundamental monograph of B.N. Kuzyk and Yu.V. Yakovets "Russia-2050: Strategy of Innovative Breakthrough" (in 2005, 2nd ed; in 2006 it was published in English and in 2007 in German). It substantiated comprehensively a long-term strategy of innovation and technological breakthrough based on innovative partnership of science and education, government and business. In 2011-2013, under the guidance of Yu. Yakovets under the grant from the Ministry of Education and Science it was done the work "Analysis of Scientific and Technological Development Factors in the Context of Civilizational Cycles", the research results are published in the monographs "Analysis of the Scientific and Technological Development Factors in the Context of Civilizational Cycles" (2013) and "The Forecast of Dynamics and Interaction of Scientific and Technological Development Factors in a Period of Change of Civilizational Cycles" (2014). In 2013-2015, under the agreement with the Eurasian Economic Commission there were carried out works on the creation of a unified system of defense, protection and use of intellectual property and "The Strategy for Defense, Protection and Use of Intellectual Property in the Eurasian Economic Union", a report on the Strategy was published and discussed at the International Forum "Anti-Counterfeit" in Minsk in December 2015.

It was prepared and published the report "Eurasian Strategy of Accelerated Scientific and Technological Breakthrough on the Basis of Effective Use of Intellectual Property” presented in Astana at the Economic Forum and the RAS Scientific Council on the Issues of the Eurasian

Integration in 2015.

In 1998, it was published and discussed at the interdisciplinary discussion the report "The School of Russian Cyclicism: Origins, Stages of Development and Prospects". The characteristics of the scientific school included in it and found recognition in the world were expounded in the monograph of Yu.V. Yakovets "Russian Cyclicism: a New Vision of the Past and the Future" published in the United States in 1999." In Russia, it has formed the scientific school leading in the world; its main result is the formation of a unified theory of cycles, crises and innovation as one of the cornerstones of the new paradigm of social science that meets the realities of the 21st century.

Yu.V. Yakovets first put forward the point of the scientific revolution of the 21st century and its structure; in 2010, a monograph "The Great Scientific Revolution of the 21st Century" (also published in Arabic) was published where there are given prerequisites, substantiation, content and historical significance of the scientific revolution in the 21st century. In expounding the theory of dynamics of scientific knowledge of Vladimir Vernadsky, Yu.V. Yakovets published the work "Scientific Revolution of the 21st Century As a Fundamental Basis of the Progress of Civilizations", which was presented at the Conference of the Nobel Laureates organized of J.I. Alferov in St. Petersburg. In 2013, it was published the work "The theory of Dynamics of the Scientific Knowledge of V.I. Vernadsky and the Scientific Revolution of the 21st Century". The basic points of the work were presented at scientific conferences dedicated to the 150th birth anniversary of Vladimir Vernadsky in Astana and Moscow, and at the round table at the University of Vienna.

3. The Development and Updating of the Political Economy

Having got education at the Leningrad State University and relying on the experience of running the department of political economy at the Leningrad Mining Institute, Professor Yu. V. Yakovets dealt with the development of topical issues of political economy and its revival in a new modification - political economy of civilizations, developing and complementing the classical heritage of the political economy of Adam Smith and David Ricardo, Andrej Storch and Karl Marx. In 1960, a monograph "Theory and Practice of Socialization of the Land" was published where it is developed the theory of land rent and land nationalization, summed up the experience of transformation of land ownership in different countries. Continuing to study the problems of rent, in the monograph "Pricing Methodology in the Mining Industry" published in 1964, Yu. Yakovets expounded the theory of mining rent, put into scientific circulation a category of differential rent by quality of useful minerals, intersectoral differential rent by interchangeability in extraction of main types of fossil fuel.

In 2002, Yu. Yakovets turned again to the issues of rent and published a report (in Russian and English) "Rent, Quasi-Rent and Anti-Rent As the Sources of Global Sustainable Development", presented at the round table of the Rio+20 Summit in Johannesburg, and in 2003, he published a monograph in Russian and English "Rent, Quasi-Rent and Anti-Rent in a Global Civilizational Dimension." In these works, it was the first time introduced the concept of innovation and financial quasi-rent as a form of super profit, ecological anti-rent as a form of super profit as a result of predatory use of natural resources and limit-exceeding environmental pollution, as well it is proposed to create global funds (ecological, technological and socio-cultural) taking into account of rent payments, including the complete taking of ecological anti-rent for account of deductions from the world rent and quasi-rent and full taking of ecological

anti-rent. These issues were discussed in the monograph "Global Economic Transformation of the 21st Century " (2011).

Much attention in the researches of Yu.V. Yakovets is given to the theory of production and the issues of structural dynamics and economics. Developing Karl Marx production scheme, Yu. Yakovets proposed to introduce additional subdivisions of social reproduction: production of weapons, services, natural resources, and products in the sphere of spiritual reproduction (the monograph "Global Economic Transformations of the 21st Century").

In 1991, in his report at the Congress of the World Economic Association in Moscow it was proposed a reproductive-cyclical macro-model to analyze the structure of the economy. On its basis, in the monograph "History of Civilizations" (1995, 1997) it was researched into the dynamics of the structure of reproduction in retrospect - from the Neolithic civilization, and in the long term - to 2060s. The monograph of 1996 "Economy of Russia: Changes and Prospects" developed the reproductive-cyclical macro-model based on the input-output balance using the system of national accounts and distinguishing the four reproduction sectors: consumer, innovation-investment, energy-raw materials and infrastructural. On the basis of this model, together with Academician Alexander Petrov it was performed a forecast of the structure of Russian economy structure for 2030 ("The Integral Macro-Forecast of the Technological Structural Dynamics of Russian Economy for 2030").

The studies of economic growth factors have shown that in the 21st century the vectors of labor and natural factors change related to falling in population growth rates, labor force and development of depopulation, as well as the increasing scarcity of natural resources and rising environmental costs. Factors of growth in the number of employed and the use of natural productive forces become limiters to the economic growth that requires more active use of factors of scientific-technological progress, optimization of the structure of reproduction and the active use of the integration factor.

In 2015, in connection with the 200th anniversary of the "Course in Political Economy" of Andrej Storch Yu.V. Yakovets came forward with the initiative on the revival of political economy in a new modification as the political economy of civilizations. This is reflected in the report "The Political Economy of the 21st Century: Historical Roots and Prospects", in the article "Revival of Updated Political Economy" (2016) and the textbook "The Political Economy of Civilizations" (2016). In these works, it is proposed to include in the subject of political economy, along with market-capitalist economy, the non-market economy - internal benefits according to Andrej Storch: public health, science, education, culture, morality, religion, and also internal and external security (governmental activity). In the structure of the course "Political Economy of Civilizations" there are distinguished sections about economic statics, dynamics and genetics, theory of reproduction, economic system of civilizations (instead of the economic mode of production), transformation of the main categories of market-capitalist economy at different stages of its development (from the manufacturing capitalism to the virtual parasite capitalism of the end of the 20th - beginning of the 21st century), interaction of economy with other components of the genotype of civilization (socio-demographic, natural-ecological, technological, socio-cultural, and public-political) as well as the formation of supra-national, global economy and the basic contours of the integral economic system, the foundations of which are being laid in the vanguard countries and which will become prevailing in the middle of the 21st century.

In 2003, under the editorship of Yu.V. Yakovets there were published collections of "The Nobel Laureates in Economics: a View from Russia" and "The Russian Economic School", which were discussed at the international scientific symposium in St. Petersburg. The report "Towards a New Paradigm of Social Science: Russian Scientific Schools" was discussed at the interdisciplinary discussion on the 25th anniversary of the Russian Academy of Natural Sciences and the Association "Forecasts and Cycles".

4. The Theory of Foresight and Methodology of Integral Macroeconomic Forecasting

Developing the theory of foresight of Nikolai Kondratieff, Yu.V. Yakovets together with B.N. Kuzyk and A.I. Ageev has worked out a methodology for integral macroeconomic forecasting that synthesizes and develops the theory of cycles, crises and innovations of Mikhail Tugan-Baranovsky, Nikolai Kondratieff, Simon Kuznets, Joseph Schumpeter, theory of civilizations of Arnold Toynbee, Pitirim Sorokin and Fernand Braudel, the doctrines of the noosphere and co-evolution of society and nature of Vladimir Vernadsky and Nikita Moiseev and the balance method in macro-forecasting of Wassily Leontief. This approach found expression in the work of Yu.V. Yakovets "Theory of Foresight: the Paradigm of Cyclicity" (1991), reports at the interdisciplinary discussions in 1989-1990 on reckoning of cycles and crises in the long-term forecasting and strategic planning, in the monographs "Cycles, Crises, Forecasts" (1999), “The Past and the Future of Civilizations” (2000), in the forecasts “The Future of Civilizations in the 21st Century", "Innovation-Technological Development of Russia for 2030" (2008), in the monographs of B.N. Kuzyk and Yu.V. Yakovets "Russia-2050: Strategy of Innovative Breakthrough" (2004, 2005), "Civilizations: Theory, History, Dialogue and the Future" (2006), and "The Integral Macro-Forecast of Technological and Structural Dynamics of Economy of Russia for 2030".

It became a contribution to the development of the theory of foresight and integral macro-forecasting the Global Forecast "Future of Civilizations" for 2050 worked out under the leadership of Yu.V. Yakovets in 2008-2009 and presented at the round table at the United Nations Headquarters in October 2009. The work on developing the forecast involved 70 scientists from 12 countries. In 2015, based on the super long-term forecast it was published a scientific report of Yu.V. Yakovets "On the System of Long-term Goals for Sustainable Development of Civilizations" (for 2050), which detailed and developed the Sustainable Development Goals.

The theory of foresight and methodology of the integral macro-forecasting developed in the works of Yu.V. Yakovets allow reliably foresee long-term tendencies in the development of national economies and world of civilizations.

5. Theory and Methodology of Pricing

For a long time (1967-1978) Yu. Yakovets was one of the research top-executives of the Research Institute for pricing and has made a significant scientific contribution to the theory of cost and price, pricing methodology, taking into account the system of pricing factors and methods of governmental regulation of the level and relation of price dynamics.

In 1964, he published a monograph "The Pricing Methodology in the Mining Industry” which addressed the issues of formation of the dynamics of prices in the mining industries taking into account the sharp differences of geological conditions of field development, their location, different quality of mineral resources and other factors. Established at the Department of

Political Economy of the Leningrad Mining Institute, self-supporting laboratory elaborated a draft list of whole sale prices for shales approved by the State Price Committee ‘Goskomtsen’ of the Soviet Union and entered into force on 1 July 1967.

Yu. Yakovets published a series of papers on the theory, history and methodology of pricing account of pricing the energy value of the fuel, the costs for geological exploration, the application of step-up prices for new technology, development of price statistics, long-term forecasting of the system of prices in the USSR, application of economic-mathematical models, creation of automated price data processing system (ADPS prices).

In 1974, it appeared a monograph of Yu.V. Yakovets "Prices in the Planned Economy" (with a foreword by Academician S.G. Strumilin) which was translated and published in the German Democratic Republic and Hungary. The book expounded the theory of the dynamics of costs and prices, substantiated the regularity of absolute and relative cheapening in price of new equipment, addressed the issues of accounting of product quality and the natural factor in pricing and governmental regulation of level, ratios and price dynamics.

Under the leadership of Yu.V. Yakovets the Research Institute for Prices in cooperation with the USSR Governmental Academy of National Economy ‘GANH’ published in six volumes "History of Pricing in the USSR." The work contains unique materials not only on prices but also on the development of the management system of economy in the years of the Soviet power. There were published the collection of scientific papers dedicated to the 50th anniversary of planned pricing system in the USSR. Yu.V. Yakovets prepared the educational guidance on pricing issues, including the textbook "Planned Pricing" (1986) and an educational guidance for learners of the Academy of National Economy under the Council of Ministers of the USSR.

In a number of recent - "Global Economic Transformations of the 21st Century" (2011), "The Political Economy of Civilizations" (2016) there are researched into the contradictions of monopoly pricing in world markets, showed how the gap of prices from the cost transforms the economy in "the kingdom of crooked mirrors", and the necessity of returning to the system and dynamics of prices showing the ratio of goods and services.

Many works of Yu.V. Yakovets are devoted to the formation of a new paradigm of social science, which reflects the leadership of Russia and the Russian scientific schools in the field of social science of the 21st century.

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