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**INFLUENCE OF FACTORS OF PRODUCTION INTERACTION  
ON PROCESSES OF WORLD ECONOMY GLOBALISATION**

A.M. Mikhailov (a), N.A. Petrov (b), E.S. Nedorezova (c), O.V. Belyakova (d)\*

\*Corresponding author

(a) Samara State University of Economics, Soviet Army Str., 141, 443090, Samara, Russia, e-mail: 2427994@mail.ru

(b) Metallocomplect-M, Profsoyuznaya Str., 65-1, 111734, Moscow, Russia e-mail: petrovnikitamail@yandex.ru

(c) Samara State University of Economics, Soviet Army Str., 141, 443090, Samara, Russia, e-mail:  
nedlen63@yandex.ru

(d) Samara State University of Economics, Soviet Army Str., 141, 443090, Samara, Russia, e-mail:  
olgabel5893@yandex.ru

***Abstract***

Globalisation is the most important trend of development and transformation of the world economy in modern conditions. The process of globalisation is connected with the transition from the industrial to the postindustrial stage of society development. The crucial role of information and knowledge in the post-industrial society requires a single world information space. The globalisation process is based on formation of a new technological way of the factors of production interaction in the postindustrial society. Information and knowledge have become leading economic resources. Due to the division of labour in conditions of the modern scientific-technological revolution the activity connected with the use of knowledge (intellectual property) is singled out as an independent one. This activity along with labour and business one are becoming not only independent but also the leading type of production activity. Knowledge is becoming an independent fifth factor of production. It is knowledge that becomes the main form of wealth in the global society. The new role of knowledge demands creation of the world economic order. There are essential contradictions between economic and institutional interests of advanced developed and developing countries. These contradictions are substantially explained by the fact that majority of developing countries haven't entered the stage of the postindustrial society. The success of the globalisation process and elimination of its contradictions are mainly determined by the directions of forming a single world institutional space.

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## 1. Introduction

The globalisation process of the world economy is considered to be one of the most urgent problems of the scientific research. Globalisation is considered in various aspects; many interpretations of this phenomenon are given. The problem needs to be discussed due to the fact that globalisation is a relatively new phenomenon, having various forms of its manifestation and covering various aspects of human society development. The globalisation process has not been completed which leads to ambiguous consequences and which is connected with different, often opposite interests.

We can single out a set of common characteristics of the globalisation process from a broad gamut of opinions. Globalisation is considered to be connected with the fact that the global economy has reached a critical level of interdependence of national economies. The problems which arouse in the world economy become the problems of the national economy (Filkevich, Platonova, Nikolaev, & Akimova, 2016). The problems in economies of some countries are required to be solved along with global world problems using joint efforts of the world community.

Development and transformation processes of the world economy are linked with the transition of the human society from the industrial to the postindustrial stage not only in time but also in essence. The term “postindustrial society” means the stage of development which follows the industrial one. The most significant characteristics of the postindustrial society assume that it is the information society, the society of knowledge.

The crucial role of information in the postindustrial society requires a single world information space. In the information society the exchange of information should not have any temporal, spatial or political boundaries. The formation of the information society is impossible without globalisation of the world economy. The implementation of information technologies in the sphere of production (automation, robotisation, creation of remote control systems of industrial complexes) as well as the development of global marketing and management systems have become the basis for the transformation of multinational companies into the dominant force of the global economy. The whole world is a real or a potential client of a firm, and at the same time any firm in the world economy is a real or a potential competitor.

Moreover, it is not only the emergence of modern electronic information technologies in the postindustrial society that matters. The matter is that at this stage of development the society has faced global problems which can be solved with the use of special knowledge based on a fundamentally new paradigm of public consciousness.

## 2. Problem Statement

The task of this research is to characterise the process of globalisation due to the changes in the production process. In our opinion, development and transformation of the world economy are based on a new technological way of production which is characterised by a new personal factor of production – “knowledge” and revolutionary changes in the factors of production interaction.

Knowledge has been applied in the production process since it came into existence, the role of knowledge rose corresponding to its growth. When we put knowledge to use it contributes to more

efficient use of traditional factors of production such as land, labour, capital and entrepreneurship. Globalisation processes are not only connected with the increasing role of information and knowledge in the development of society. Information and knowledge have always been important for the mankind. In our opinion, the most important fact is that the transition from the industrial society to the postindustrial one is connected with the change of the technological way of the factors of production interaction caused by influence of the second stage of the scientific-technological revolution.

The factors of production interaction under the influence of modern scientific-technological revolution is determined by the fact that in conditions of the knowledge economy the application and use of knowledge activity should be singled out as independent in the production process along with labour and business activity. The enhanced social division of labour in the industrial society has singled out the business activity as an independent one and entrepreneurship has become an independent factor of production. The division of labour in the postindustrial society encourages the separation of the activity connected with the application and use of knowledge from labour and business activities. This independent activity is linked with innovation and implementation of the achievements of scientific-industrial revolution into the production process. In our opinion, the term “intellectual” is quite suitable to define this activity.

Knowledge is becoming an independent fifth factor of production due to the fact that the modern production process is impossible without intellectual activity. The fundamental change in the factors of production interaction is connected with the fact that the application and use of knowledge activity becomes determinant in the production process. As a result technological communications and interrelations between the factors of production change. The process of their interaction is being transformed which means the change of technological way of production.

### **3. Research Questions**

The trends of development and transformation of modern world economy are connected with the processes of its globalisation. The main issues to be studied are as follows:

- the research of interrelation of the world economy globalisation processes with formation of a new technological way of the factors of production interaction in the postindustrial society.
- theoretical justification of knowledge as an independent leading factor of the post-industrial production.
- forming a single institutional space for resolving contradictions of globalisation.

### **4. Purpose of the Study**

The purpose of the study is to research in what way transformations in the factors of production interaction influence the world economy globalisation processes.

## 5. Research Methods

A combination of general scientific and special methods of study of economic phenomena is used in the article. An integrated approach includes such methods as systematic, specific-historical, abstract-logical, dialectic, institutional-evolutionary, terminology analysis, normative and positive analysis.

Statistical data, including Eurostat materials, reports of the World Bank, statements and statistical data of the WTO, UNESCO were used as experimental base of the research. Analytical materials of the world research and rating agencies, expert estimates of the prominent scientists from all over the world were used.

## 6. Findings

The process of globalisation is connected with the emergence of a new technological way of interaction of the postindustrial production factors. The role and significance of factors of production, their structure and correlation have changed fundamentally. There are basic changes in technological ways of interrelations of material and personal factors of production. The production process is changing, the process of its factors interaction is being transformed. The technological way of the postindustrial society production has direct impact on the processes of the world economy development.

In the industrial society science has become direct production force, in the postindustrial society information is becoming such a force along with science. The globalisation process is impossible without information revolution. It is not just information itself that is important. Information must turn into knowledge in order to become direct production force.

Knowledge is people's abilities acquired in the process of upbringing, education, experience accumulation, further training which are used to assimilate, convert and, which is the most important, to apply information. In a broader sense, knowledge enhances people's abilities. Knowledge increases people's abilities to participate in labour and business activities, influences abilities of other owners of the factors of production to use these factors efficiently.

In the narrow sense, knowledge is an ability to participate in an intellectual activity. Having such an ability does not mean that knowledge becomes a factor of production. Originally, knowledge is a resource which exists self-sufficiently and independently of other resources. Knowledge becomes a factor of production only when it merges with other resources and begins to interact with other factors of production. In the knowledge economy the latter not only influence the increase in the efficiency of the traditional factors of production but also they are becoming the leading independent factor of production.

One of the most important factors of economic growth is positive influence of the institutional environment on development of innovative human capital. Such a policy of development of employee's personal characteristics undoubtedly contributes to economic growth (Kagana, Hauerwaasb, & Holzc, 2018).

Forming of the knowledge economy is the most important aspect of the development of the world economy in modern conditions. Knowledge is becoming the main form of wealth in the global society. Knowledge, acquired due to unhindered access to information and ability to work with it, is becoming the main condition of the well-being of every person and every state. Knowledge itself is of international

character. In the knowledge economy the unity of the world is not a theoretical or ideological abstraction but a fact of its daily life. Globalisation sharply enlarges person's possibilities to choose where and at what prices to buy goods and services, it makes sellers more dependent on consumers, makes life much harder for monopolists, unscrupulous employers and manufacturers. The use of satellites, "live" radio, television and the Internet exerts massive impact on the formation of public opinion all over the world. The emergence and improvement of multimedia, videoconferencing and artificial intelligence greatly expand possibilities of information transfer and thus dissemination of knowledge and knowledge sharing.

The most important feature of the postindustrial society is the shift in focus in production from the use of materials to production of information and provision of services, which entails a relative decrease in extraction and processing of raw materials and energy consumption. Primary development of the tertiary sector of the economy - provision of services- leads to the essential change in proportion of the economy industries in the formation of the gross national product. In a number of European countries more than a half of funds turnover in the information industry accounts for creation of information products and technologies, less than half is spent on the production of equipment; in the communication industry the gap is even stronger.

Due to the transformation of the factors of production interaction and transformation of knowledge into an independent fifth factor of production, the role of traditional factors is changing. One sets a goal to obtain maximum of production at the lowest cost by putting various volumes of labour force, natural, financial and entrepreneurial resources into the production process and determining their optimum combination. In conditions of globalisation the problem of efficiency (i.e. the correlation of results and costs) can be solved by means of knowledge application as it is knowledge that develops technology capable of transforming person's consciousness while moving productive forces of society to a qualitatively new level of functioning (Inozemtsev, 2000). In other words modern global production has brought information and knowledge to the foreground. They were known earlier but now they are acquiring completely new forms of manifestation. Nowadays, knowledge overshadows the traditional factors such as capital, labour and land. As a result, the industries of production and distribution of intangible products – knowledge and information – have become the centre of economic life for the last 40 years. The main wealth of the society is being accumulated here. Human capital which includes knowledge accounts for 2/3 of the national wealth of the world. Moreover, the share of human capital reaches ¾ in the countries of North and Central America, Western Europe and Eastern Asia. The opportunity of transition to the postindustrial society lies in the internal forces of the individual, in his ability to absorb, analyse and transform information coming from the outside world into knowledge. The knowledge economy and the information economy are the basis of the post-industrial society.

Due to information technologies, transformation of live human consciousness, both individual and collective, has become the most profitable and efficient business. It has nothing to do with transformation of "dead" things which the mankind has been engaged into since the time it came into being. To turn forming of consciousness in the most profitable business is not a private matter of commerce. It changes the character of human development: if earlier the mankind changed the world around, then now, probably because the anthropogenic load on the biosphere has reached a critical level, it has shifted to changing itself.

There are two oppositely directed processes in the world economy nowadays. On the one hand, the production of fundamental knowledge is concentrated in several centres, on the other hand, applied knowledge and its consumption instantly spread throughout the world.

A material product can be destroyed. It is possible to destroy knowledge only by creating new knowledge, more perfect than the previous one, i.e. the destruction process in this case works for the good.

Knowledge as a factor of production leads to the emergence of new forms of business. Information gathering, learning and adapting to the changing environment are unprecedentedly fast. Companies that managed to adapt to a new culture of cooperation with clients and business partners become or remain leaders. They develop the image of constant changes, long for continuous reconstruction of their processes and product upgrading.

Dell Computer Company has essentially revolutionised the sales of personal computers by offering them to regular customers. It has shifted to super-fast production cycle which has shocked its competitors. As a result all computer manufacturers have been forced to deepen considerably the analysis of their customers' orders to keep up with the changes in the market trends (Auguste, 2018).

The market value of modern transnational corporations (TNC), which are considered to be the driving forces of the world economy development according to the opinions of many researchers, sometimes two times as much as their book value (Konina, 2017). The real value of such corporations cannot be defined by traditional accounting methods, as they do not take into account the value of knowledge at the disposal of TNCs. The value of companies, especially working in the sphere of modern technologies, is not determined by the price of equipment and buildings, or by the value of inventory size, but by categories of the other – intangible - asset, called the intellectual capital. The intellectual capital is becoming a factor of economic development both at the world and at the regional level (Konovalova, Kuzmina, Hansevyarov, & Persteneva, 2016). When Microsoft Company announced the launch of Windows 95 operating system, the price of each share rose by more than 100 dollars, as a result making the enterprise value is higher than that of such giants as Chrysler and Boeing. Netscape Company, with the capital estimated in 17 mln. dollars turned into public limited company and raised its capital to 3 bln. dollars taking into consideration the market price of the shares.

For the analysis of human potential development in the era of globalisation such an integrative indicator as the Human Development Index (HDI) is used. In general in the countries covered by observation (more than 170 countries) the HDI increased from 0.706 in 1975 to 0.741 in 2004. Norway is in the first place (0.868 in 1975, 0.965 in 2004); Japan ranks the seventh (0.859 in 1975, 0.949 in 2004); the USA is in the eighth place (0.868 in 1975, 0.948 in 2004). Russian is among the middle-level developed countries (0.771 in 1995, 0.797 in 2004 – 65th place), Brazil is 69th in the ranking (0.647 in 1975, 0.792 in 2004). Burkina Faso closes the list – 174th place (0.256 in 1975, 0.342 in 2004) and Mali – 175th place (0.232 in 1975, 0.338 in 2004) (Watkins, 2006). On the one hand, the provided evidence confirms the growth, on the other hand, it indicates the unevenness of human potential development which means the unevenness of knowledge accumulation in different countries.

The countries which have entered the stage of the postindustrial society gain an advantage under the influence of modern transformations of the world economy. In these countries the knowledge economy is in the making, the process of the factors of production interaction is being transformed.

In a number of countries the specific features of human capital development can be based on the established practice of educating the local, namely aboriginal population, for example tribes in Australia, New Zealand and other countries. In general the economic growth also depends on the involvement of this category of perfectly economically active population.

The knowledge economy which is developing in advanced industrial countries is characterised by constant uninterrupted increase of the share of knowledge in the final cost of products and services, by the increase of the share of workers engaged in processing and transmitting information in the total number of employees. At present this indicator has reached 60-70%.

High-quality human capital, namely highly skilled and experienced, is needed for the favourable development of the industry, services and other economy sectors. To a certain extent modern knowledge economy can slow down this process, in the sense that for the greater part educational services are paid for (Huiyue & Majid, 2018).

When the issue of the quantitative assessment of information production contribution to the national wealth was raised for the first time in the fifties of the twentieth century and 30 knowledge-producing industries were singled out, the volume of information sector in the US economy was estimated approximately at one third. It is more than a half nowadays. In fact, the share of information production in the economy of advanced industrial countries is much higher, which is connected with the so-called secondary information sector, its products – information goods and services of in-company consumption – have no independent assessment and are included in the market price of non-information products. New information technologies are used in almost all areas of the economy. About 25% of capital investment of banks and insurance companies are directed at creating and processing of information necessary for the functioning of the economy. Information technologies are widely used in such areas as finance, economic forecasting, resource distribution planning, marketing, trade, advertising, communication.

At the same time not all the mankind uses benefits of emerging knowledge economy. First of all, the leaders of the world economy, namely the members of the Organisation for Economic Cooperation and Development (OECD), are at the stage of the postindustrial society. These states own two thirds of the world economy, international banking system. They dominate in the capital market and in technology-based industries. It is these countries that are interested in globalisation of the world economy and that develop it. As a result not more than 25% of the population of the Earth use the results of the globalisation process. About 75% of the humanity live in the countries, which are in the industrial and preindustrial stages of social development.

Maintaining such an order in the global institutional space requires considerable transaction costs and hampers the development of the world economy, which eventually is not in the interests of the postindustrial countries (Prabhat & Tandon, 2018).

There is also a regional aspect of the knowledge economy distribution. Thus developing countries that use foreign capital can share further experience in manufacturing with their less developed neighbours.

At present the institutions existing in the global institutional space, first of all, reflect the interests of economically developed countries which have entered the stage of postindustrial development. This makes it possible for developed countries to take advantage of the benefits of information and knowledge they possess and use them to their economic interests to the detriment of developing countries through the exploitation of these countries' economic resources.

As a result, there are contradictions between the economic and institutional interests of developed and developing countries in the world economy (Mikhailov, Khansevyarov, & Vishnever, 2016). These contradictions are largely due to the fact that most developing countries have not entered the stage of the postindustrial society yet. The process of globalisation primarily involves countries where the knowledge factor is becoming more and more decisive. The successful involvement of more and more countries in globalisation depends on the extent to which the knowledge factor will influence the production processes in these countries, the transformation of the factors of production interaction (Glauber & Barreiro, 2018).

The development of globalisation, the resolving of its contradictions (and they often take antagonistic forms in the modern society) is largely determined by the directions of the formation of a single global institutional space.

The religious aspect of personal development and, as a result, the development of human capital is not a well-studied factor in the formation of an institutional space. Certain religions, for example Islam, prohibit any activity that is connected with the charge of interest. That is a person who decided to devote himself to the financial sphere should study the sciences as opposed to his religious views. The process of globalisation should smooth such interpretations of a religion and economic laws.

The attitude to globalisation of the majority of the mankind depends on the rules of the game that will exist in the emerging global economy.

## **7. Conclusion**

Firstly, the process of globalisation is connected with the forming of a single economic space. It is manifested in the formation of global markets for goods and services, factors of production, financial and other markets.

Secondly, the global information space is being formed. Certainty and accessibility of information are the most important characteristics of the phenomenon of globalisation, contributing to the further development and growth of related processes. The more complex the world economic system is, the more information is needed to make decisions and reduce uncertainty and, accordingly, the stronger the desire to form a single global information space is (Aloyan, 2015).

Thirdly, the common institutional space is being formed – the setting of common rules of economic activity for all players of the world economy. Global institutions of globalisation are being emerged.

The globalisation of the world economy creates a single global economic, information and institutional space based on new technologies which are able, among other things, to transform human

consciousness (both collective and individual). This can significantly reduce the uncertainty of the economic environment, increases the efficiency of the factors of production interaction in the new technological method of production and thus makes it possible to achieve a qualitatively new level of efficiency in the development of productive forces in the world as a whole (Beck & Park, 2018).

The transformation of knowledge into an internal process of the economic growth provides grounds for a new approach to the assessment of its results. In the world economy any growth of national economies is achieved by the global scientific and technological progress. Its potential is quite high – about 90% of all scientists who have ever been on the planet live nowadays. The new role of knowledge requires the creation of the world economic order that ensures optimal growth of the world economy, equalizes the level of development of different countries and regions and forms a fair system of distribution and redistribution of the world product.

In the process of globalisation the institutional space should be formed that would contribute to the development of the information society and the knowledge economy throughout the world, would stimulate the transition of developing countries to the postindustrial stage (George, 2018).

The institutions of the world economy should at the expense of the common, well-known and therefore reducing uncertainty “rules of the game” satisfying all its players, ensure the transformation of the interaction of factor of production connected with the transition to a new technological method of production in the whole world and the achievement of greater efficiency of their interaction on this basis.

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