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Developing Countries as New Growth Poles of Post-Crisis Global Economy

Elena Popkova¹, Svetlana Meshkova², Evgeniya Karpunina³, Elena Karpushko⁴, Marina Karpushko⁵

ABSTRACT

This article is devoted to the search for a solution to overcoming the consequences of the global financial and economic crisis and the development of a post-crisis global economy. The purpose of this article is to determine perspectives and directions for the development of new growth poles in a post-crisis global economy and to develop tools for overcoming the consequences of the crisis and facilitating the global economic system entry into a new level of economic growth. The article uses the proprietary methodology for the calculation of "underdevelopment whirlpools," which analyzes the dynamics of economic growth of the most prominent countries in this group and their ability to overcome "underdevelopment whirlpools" and transform into new growth poles for the global economy following the global financial crisis. The use of calculation tools for "underdevelopment whirlpools" determines the prospective of developing countries' transformation into new growth poles in a post-crisis global economy. China, Japan, Brazil, Russia, and India are such poles at present, and they will strengthen their positions in the near future. For this, the research offers the following perspective and directions for the development of new growth poles in a post-crisis global economy for the increase in rates and quality (stability and sustainability) of economic growth: an emphasis on the real sector development of the economy, realization of transnational cluster initiatives, and active creation and implementation of innovations into production. As tools for overcoming the consequences of the crisis and the global economic system entering a new level of economic growth, the author developed the mechanism of post-crisis global economy development.

KEY WORDS:

growth poles, global financial and economic crisis, post-crisis phenomena, innovations, global economy

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¹Volgograd State Technical University, Russian Federation, ²Perm Institute of Economics and Finance, Russian Federation, ³G.R. Derzhavin Tambov State University, Russian Federation, ⁴Volgograd State University of Architecture and Civil Engineering, Russian Federation, ⁵Perm National Research Polytechnic University, Russian Federation

Introduction

Over several decades, the global economy has shown stable growth and development. However, despite positive forecasts, 2008 was marked by the global financial

crisis, the consequences of which – unemployment, inflation, and reduction of economic growth – influenced even the most economically developed countries.

At present, the global economic system is in post-crisis conditions. To overcome the current recession, it is necessary to reconsider traditional approaches to the provision of economic growth and search for new sources of growth. In this context, it is necessary to focus on the gradual restructuring trends of the global economy.

Correspondence concerning this article should be addressed to: **Elena Popkova**, Volgograd State Technical University, 28 Lenina St. Volgograd 400000 Russian Federation. E-mail: elenapopkova@yahoo.com

Developed countries, which occupy leading positions in the global economy, have almost depleted their potential for further development and realization of strategies to preserve these positions. Indeed, they are overcome in this aspect by developing countries, which possess significant potential for development. Most importantly, the motivation to search for new solutions and actualize new ideas, i.e., the creation and implementation of innovations, is led by developing countries.

Innovations have been a moving force of the global economy, not only over the past few decades but throughout the entire history of mankind. Research has shown that the implementation of innovations has allowed previous global crises to be overcome, which is why it is believed that the consequences of the recent financial and economic crisis will be overcome with the help of innovations.

Therefore, it is necessary to focus on sources of innovations, determine the best direction for their use, and create favorable conditions for their implementation into production. It is very likely that country-incubators of innovations will become new growth poles of the global economy in the short term.

Before the crisis, the USA and the EU were the growth poles of the global economy – they have demonstrated the highest rates of economic growth over the past 35 years and have made the greatest contribution to the formation of the global GDP. China, Japan, Brazil, Russia, and India can potentially take their place after the crisis because the total GDP of these countries exceeds the U.S. GDP, and the economy of these countries is based on the real sector of production, which shows the highest stability and sustainability levels as well as innovation potential.

This research offers a hypothesis in which the conditions of the global economic system functioning were changed cardinally due to the global financial and economic crisis, and the previous growth poles of the global economy are not capable of providing the desired effect, which necessitates the search for new growth poles and the development of working mechanisms in the post-crisis global economy to overcome the long recession.

The purpose of the article is to verify the proposed hypothesis, determine directions for development and new growth poles for the post-crisis global economy,

and develop tools to overcome the consequences of the crisis and the global economic system's entry into a new level of economic growth.

Literature Review

The theoretical basis of the research is composed of fundamental works in the study of the sense, notion, and meaning of economic growth for socio-economic systems by authors such as (Pogosov, 2015; Odhiambo, 2015; Zeira & Zoabi, 2015), among others. Economic growth is a process involving the increase in the production capabilities of an economy (Leonida et al., 2015) and can be expressed quantitatively, measured by the increase in GDP growth rates (Sarracino & Bartolini, 2015), and qualitatively, changing the structure of the economy (González-Pernía & Peña-Legazkue 2015). The development of modern economic systems is impossible without economic growth (Choi & Shin, 2015; Lee & Oh, 2015). Therefore, economic growth influences the development of any socio-economic system (Castiglione, Infante, & Smirnova, 2015).

This article also uses material from recent studies that analyze the peculiarities, factors, and conditions of global economic development at present and the growth poles of various economic systems, among which studies by (Bere, 2015; Kolomiets, 2015; Smékalová, Hrabínová, & Habuda, 2014), among others, can be distinguished. The most important peculiarity of modern global economic development is its orientation toward building and developing market relations (Dymskill, 2013) and establishing priorities for the development of the service sphere, which is one of the most important growth poles of the modern global economic system (Ravuri, 2012). The most important factors of global economic development are the globalization and integration of various economic systems (Christofakis & Papadaskalopoulos, 2011), as well as the creation and implementation of innovations for the production activities of business structures (Fuseini & Kemp, 2015).

While conducting research, the author found studies on the foundations of the functioning of the modern global economy and the trends of its development in the past and prospective views, including studies by (Docquier & Machado, 2015; Ilie & Jaradat, 2015; Yakovleva, Azarova, & Titova, 2015), among others. The modern global economic system is based on the

principles of the increase in cooperation between its members (Wirtz, Tuzovic, & Ehret, 2015), which is expressed in the processes of regionalization and the international division of labor (Čaušević, 2015). The most important tendencies of the global economic system development include the transnationalization of business (Klinov, 2015), the growth of production factor flows at an international scale (Kornev, Maksimtova, & Treshchina, 2015), the increase in global economic problems, which require joint solutions by all countries around the world (Pulselli et al., 2015), and the acceleration of crisis phenomena distribution in all member countries regarding integration associations and the global economic system (Dudin & Frolova, 2015).

The author uses research materials by various authors in study of crises in economic systems as well as the sense and peculiarities of the global financial crisis that began in 2008, including (Aytaç, Rankin, & İbikoğlu, 2015; McMaster, 2015; Rodriguez, Turmo, & Vara, 2014; Zhao, Jiang & Li, 2015), among others. An economic system crisis is a temporary violation of processes that take place in the system (Heinrich, Kobayashi, & Bryant, 2016). Economic crises are of different depths and durations (Guttman, 2015). The most important peculiarities of the global financial crisis, which began in 2008, are the strengthening of risk components in the financial sphere of the economy due to the active implementation of financial innovations in recent years (Galbraith, 2012), the unprecedented scale of the crisis (Capello, Caragliu, & Fratesi, 2015), and structural shifts in the global economic system as a result of the crisis (Hieronymi, 2016).

Method

The theoretical basis of the research is composed of fundamental works on the notion, sense, and meaning of economic growth for socio-economic systems by authors such as (Castiglione et al., 2015; Choi & Shin, 2015; González-Pernía & Peña-Legazkue, 2015; Lee & Oh, 2015; Leonida et al., 2015; Odhiambo, 2015; Pogosov, 2015; Sarracino & Bartolini, 2015; Zeira & Zoabi, 2015), among others.

This study also uses material from recent research that is devoted to the analysis of the peculiarities of the factors and conditions of current global economic development and the growth poles of various economic

systems, among which it is possible to distinguish the works of (Bere, 2015; Christofakis & Papadaskalopoulos, 2011; Dymskill, 2013; Fuseini & Kemp, 2015; Kolomiets, 2015; Ravuri, 2012; Smékalová et al., 2014), among others.

While conducting research, the author found studies on the foundations of the functioning of the modern global economy and past trends and prospective development, among which are studies by (Čaušević, 2015; Docquier & Machado, 2015; Dudin & Frolova, 2015; Ilie & Jaradat, 2015; Klinov, 2015; Kornev et al., 2015; Pulselli et al., 2015; Wirtz et al., 2015; Yakovleva et al., 2015).

The author also uses materials from the research of various authors on economic system crises and the sense and peculiarities of the 2008 global financial crisis. These include the works by (Aytaç et al., 2015; Capello et al., 2015; Galbraith, 2012; Guttman, 2015; Heinrich et al., 2016; Hieronymi, 2016; McMaster, 2015; Rodriguez et al., 2014; Zhao et al., 2015).

To determine new growth poles in a post-crisis global economy, this research uses a proprietary methodology to calculate “underdevelopment whirlpools,” which is described in detail in numerous publications by E. G. Popkova that include examples and detailed calculations (Popkova et al., 2013a; 2013b; Popkova & Tinyakova, 2013a; 2013b; 2013c; Popkova et al., 2015), etc.

The methodology of “underdevelopment whirlpools” was developed by the author of this article, Professor Elena G. Popkova, and it is her own development and has been successfully applied over many years. The effectiveness of this methodology was proved by multiple studies in various countries around the world.

An analysis of the “underdevelopment whirlpools” supposes a determination of two key parameters: the depth of the whirlpool and the speed of being drawn into the whirlpool. First, a model country is determined, which leads other countries in the contribution to the global GDP formation and the most important growth pole of the global economy before the 2008 global financial crisis.

The depth of the “underdevelopment whirlpool” is then calculated through a determination of the time lag in the country based on the “model country” regarding the GDP level. For this purpose, the correspondence of the GDP level in the examined country for the selected

Table 1. Table for determining the depth and speed of countries falling into “underdevelopment whirlpools” and perspectives for overcoming these whirlpools

Country	Year	V	Y	Dwhirlpool	Swhirlpool
1	1,2,...,n	V _{1,2,...,n}	Y _{1,2,...,n}	Year-Y	Dwhirlpool2- Dwhirlpool1
2	1,2,...,n	V _{1,2,...,n}	Y _{1,2,...,n}	Year -Y	Dwhirlpool2- Dwhirlpool1
...
n	1,2,...,n	V _{1,2,...,n}	Y _{1,2,...,n}	Year -Y	Dwhirlpool2- Dwhirlpool1

year to the level of the GDP of the “model country” in one of the previous years is determined.

As a result, the difference between the selected year and the year in which the GDP level of the “model country” coincided with the GDP level in the studied country is determined. The resulting difference reflects the depth of the “underdevelopment whirlpool.” The speed of being drawn into the “underdevelopment whirlpool” is determined as the difference between the depths of the “underdevelopment whirlpool” in the current year and the previous year.

Table 1 uses the following legend:

V – GDP per capita;

Y – year in which the country model had the same GDP per capita;

Dwhirlpool – depth of the “underdevelopment whirlpool”;

Swhirlpool – speed of being drawn into the “underdevelopment whirlpool.”

With regard to the analysis of the growth poles of the post-crisis global economy, this methodology is expected to determine the dynamics of economic growth of top leading countries and trends regarding their overcoming “underdevelopment whirlpools,” taking leading positions instead of the ones lagging behind in contributing to the formation of the global GDP and their transformation into new growth poles of the global economy following the global financial crisis.

Results

Before the 2008 global financial crisis, the growth poles of the global economy were the U.S. and countries in the EU, which have demonstrated the highest

rates of economic growth and contributed the most to the formation of the global GDP over the last 35 years.

The crisis in the global economy deepened the gap between developed and developing countries in the global economic system, which led to larger migration flows into EU countries. This may be a reason for some countries to leave the EU and further weaken its positions.

It is also possible to suppose that the financial sphere, which has been a growth pole for the U.S. economy in recent decades, depleted its possibilities. Financial speculations were the main cause for the recent financial crisis, which demonstrated their high risk component and incapacity for the provision of stable economic growth.

In this context, the economic growth of industrial countries by means of industrial production and development of the real sector of the economy attracts a significant amount of attention. Such countries include China, Japan, Brazil, Russia, and India, which occupy leading positions in the global GDP rankings of countries and increasingly contribute to the formation of gross global product.

Several decades ago, these countries did not attract any attention in view of economic development and were far from leading positions in international rankings. However, they have made major advances and continue to develop. Figure 1 shows the dynamics of GDP of the USA, Japan, Russia, Brazil, and India over the past 35 years.

With the help of the calculation methodology for “underdevelopment whirlpools,” let us view the process of development of these countries (Tables 2, 3).

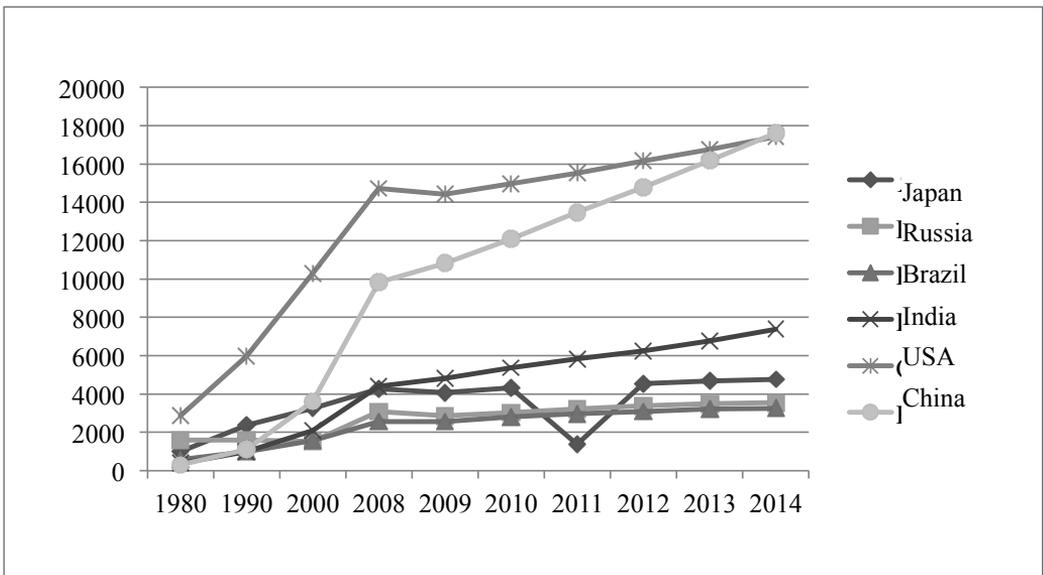


Figure 1. GDP dynamics of the USA, Japan, Russia, Brazil, and India from 1980 to 2014.

Source: IMF (2015)

Table 2. Results of the calculation of “underdevelopment whirlpools” in China and determination of perspectives of its transformation into a new growth pole of the post-crisis global economy

Country	Year	V, USD billion	Y	Dwhirlpool	Swhirlpool
China	1980	298.4	1970	10	-
	1990	1,091.2	1975	15	5
	2000	3,608.3	1983	17	2
	2008	9,826.8	1999	9	-8
	2009	10,813.8	2001	8	-1
	2010	12,085.5	2004	6	-2
	2011	13,482.1	2005	6	0
	2012	14,789.5	2008	4	-2
	2013	16,173.3	2012	1	-3
	2014	17,617.3	2014	0	-1

The model country is the USA, which has been a key growth pole in the global economy in recent decades. China has the highest indicators of GDP among the countries in the world, so it is advisable to view it separately.

Japan, Brazil, Russia, and India also demonstrated high rates of economic growth in recent decades. However, they cannot separately compete with current global leaders, so it is advisable to group them and view their total contribution to the formation of the global GDP.

Table 3. Results of the calculation of “underdevelopment whirlpools” in Japan, Brazil, Russia, and India and the determination of perspectives of their transformation into a new growth pole of the post-crisis global economy

Countries	Year	V, USD billion	Y	Dwhirlpool	Swhirlpool
Japan, Brazil, Russia, India, SAR	1980	3,549.0	1982	-2	-
	1990	5,955.1	1990	0	2
	2000	8,453.2	1996	4	4
	2008	14,329.9	2007	1	-3
	2009	14,328.0	2007	2	1
	2010	15,522.5	2011	-1	-3
	2011	13,432.1	2005	6	7
	2012	17,272.7	2014	-2	-8
	2013	18,172.9	2015	-2	0
	2014	18,955.0	2016	-2	0

As observed from Table 2, at the beginning of the viewed period in 1980, China lagged behind the USA by 10 years in terms of economic development. In 1990, the depth of the “underdevelopment whirlpool” grew by 15 years, and in 2000, by 17 years. However, given the crisis conditions, in 2008, the gap between the GDP levels of China and the USA was reduced to 9 years.

Afterward, under the conditions of the post-crisis global economy, a negative speed of being drawn into the “underdevelopment whirlpool” is observed, and this pressure of the underdevelopment whirlpool is overcome. In 2014, the Chinese GDP exceeded the GDP of the USA (\$17,617.30 billion versus \$17,418.90 billion).

As observed from Table 3, the total GDP of Japan, Brazil, Russia, and India at the beginning of the viewed period in 1980 exceeded the American GDP. However, in 2000, an “underdevelopment whirlpool” appeared, the depth of which constituted 4 years. Beginning in 2014, the total GDP of these countries exceeds the GDP of the USA.

The use of calculation tools for “underdevelopment whirlpools” allowed for the determination of turning the countries that lagged behind into new growth poles of the post-crisis global economy. China, Japan, Brazil, Russia, and India are such poles now, and according to

the IMF forecast, will strengthen their positions in this role in the near future.

To this end, the research offers the following prospective directions for the development of new growth poles of the post-crisis global economy to increase the rates and quality (stability and sustainability) of economic growth:

- emphasis on the development of the real sector of the economy, which is necessary for the provision of sustainable development;
- the realization of transnational cluster initiatives, which is oriented toward the increase in economic growth rates;
- the active creation and implementation of innovations into production, which is important for positive economic development.

Let us view the above proposals in detail. An emphasis on the development of the real sector of the economy supposes an industrial direction of new growth poles in the post-crisis global economy. This does not mean that the development of the sphere of services and agriculture should not be given any attention – the importance of these spheres is not diminished but rather moves into the background, making way for the production sphere.

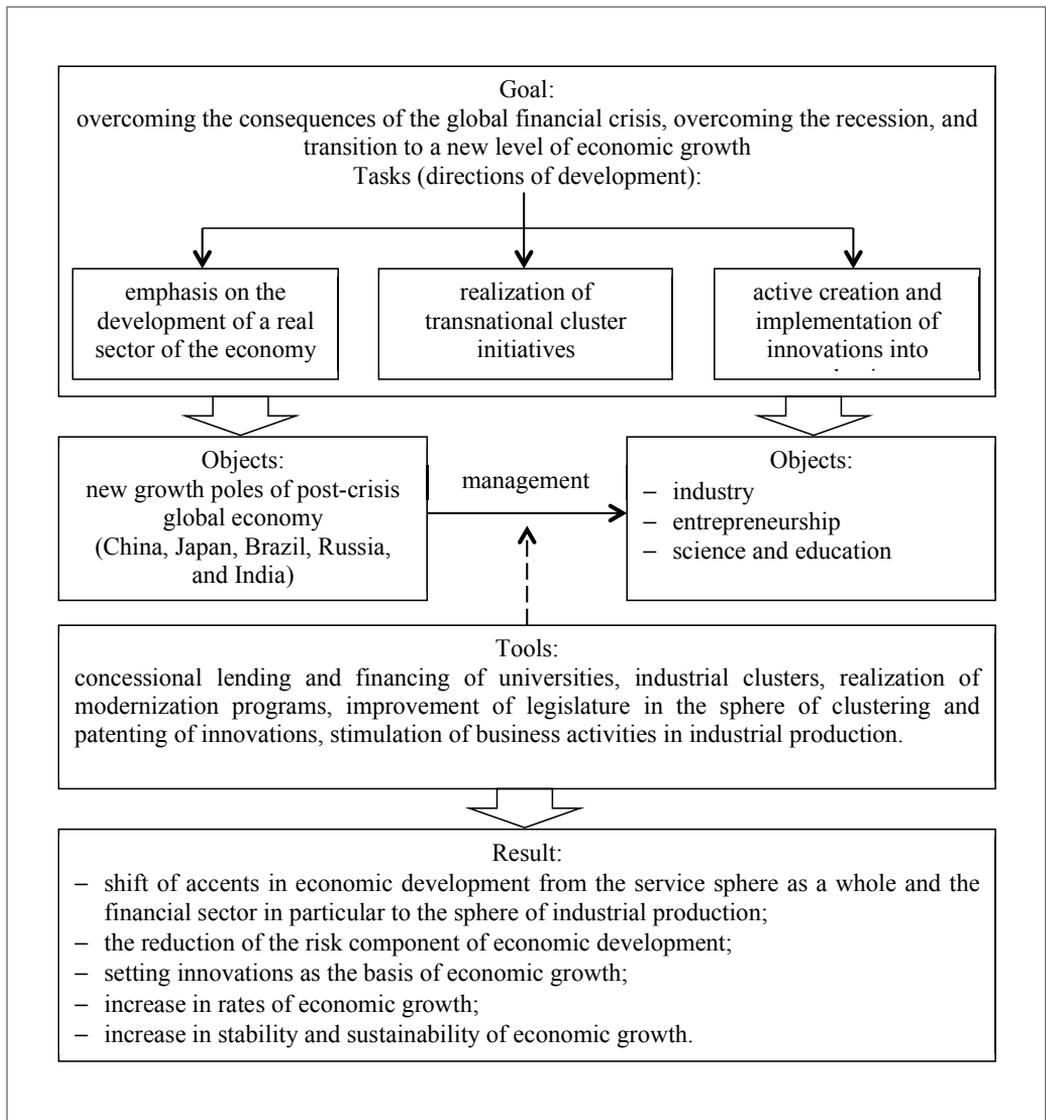


Figure 2. Mechanism of development of the post-crisis global economy

The realization of transnational cluster initiatives is oriented toward the determination of strong transnational connections and the further integration of growth poles into the global economic system. To withstand international competition, companies from these countries have to combine efforts and cooperate within transnational clusters.

The active creation and implementation of innovations into production supposes the development of research and education. The development of science will lead to the creation of multiple inventions and innovational technologies. Information on new knowledge should be distributed throughout the entire economy to successfully commercialize

innovations and ensure their quick implementation into production.

An increase in the educational level will stipulate the creation of highly qualified human resources that are capable of using the newest technologies and equipment, which will create favorable conditions for the modernization of the production sector and the formation of industrial enterprises, which are highly competitive in the global markets.

As tools for the realization of the current potential of the global economic system for overcoming the consequences of the global financial crisis, overcoming the recession, and transitioning to a new level of economic growth, this research offers the following mechanism of development for the post-crisis global economy (Fig. 1).

As observed from Fig. 1, the proposed mechanism is oriented at overcoming the consequences of the crisis and the global economic system's transition to a new level of economic growth. The objective of the mechanism is to develop new growth poles of the post-crisis global economy (China, Japan, Brazil, Russia, and India).

The objective of the mechanism in terms of developing the real sector of the economy is developing industries. In terms of the realization of transnational cluster initiatives, the objective is entrepreneurship, and for the active creation and implementation of innovations into production, the objective is increased research and education.

To achieve the set goal for the realization of the prospective directions of the development of new growth poles in the post-crisis global economy, a special tool is used. For the development of the production sector of the economy, it is advisable to use the following tools to stimulate the state:

- the provision of subsidized credits for the modernization of equipment;
- the stimulation of business activities in industrial production.

For realization of cluster initiatives, the following tools should be used:

- the provision of financial resources to clusters under concessional terms;
- the improvement of laws in the clustering sphere.

For development of research and education, the following tools should be used:

- improvement of the system for patenting innovative technologies;

- increased financing of universities, scientific research and developments, and the active provision of budgets in universities to popularize higher education and increase its accessibility.

The expected and most probable results of the realization of the mechanism are the shift in emphasis in economic development from the service sphere on the whole and the financial sector in particular to the sphere of industrial production, the reduction of risk components in economic development, the establishment of innovations into the basis of economic growth, the increase in rates of economic growth, and the increase in stability and sustainability of economic growth.

Conclusion

Thus, due to the use of the analysis methodology of "underdevelopment whirlpools" and the study of the development dynamics of the most promising countries, the proposed hypothesis is proven in which it is determined that the new growth poles of the post-crisis global economy are China, Japan, Russia, Brazil, and India.

The shift of the emphasis in the global economic system confirms the expediency of the use of new development mechanisms for overcoming the consequences of the crisis and the provision of the new quality of growth in the global economy, which include the mechanism developed by the authors of this study.

As a result of this research, it is possible to conclude that, like any system, the global economy can change its structure; however, this requires new approaches to its analysis. Despite the wide diversity of the corresponding methods, this type of analysis is difficult to model and forecast.

The developed tools allow countries to overcome the consequences of the global financial crisis and use the crisis as stimulation for development, without which there are no stimuli for new knowledge, and the implementation of innovations does not proceed.

The crisis also demonstrated the mistakes of state management and the non-effectiveness of previous methods of stimulation for economic growth and development. A new vector of growth in the global economy should be an industry that develops in a stable manner, and the poles of growth should be countries with industrial foci.

Despite the practical direction, the results of this study are limited by the theoretical consideration of the problem of overcoming the post-crisis phenomena in the global economy, determination of new poles of growth, and development of tools for maximal use of poles to transition the global economic system to a new level of economic development.

In conducting further research on the global economy's departure from a post-crisis state, researchers should focus on checking the results of this research with experiments and comparing the expectations for the establishment of China, Japan, Brazil, Russia, and India as new growth poles of the global economy. The practical use of the developed tools should be emphasized.

Further development of the theory and methodology of the "underdevelopment whirlpools" should base its validity on the example of countries that have not yet been the objects of the research of "underdevelopment whirlpools" to determine its universality and effectiveness.

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