UDC 33:336.1(077) (091)

THE IMPACT OF FORMATION OF INNOVATIVE ECONOMY TO THE CYCLICAL DEVELOPMENT

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Annotasiya. Maqolada inqirozga qarshi dasturlar tahlili asosida sistemali risklar va iqtisodiy inqirozlarga qarshi immunitetni innovasion rivojlanish orqali shakllantirish yoritib berilgan. Shuningdek, innovasiyalarga sarf-harajatlarning oshirilishi iqtisodiy o‘sishga olib kelishi asoslangan. Maqola so‘ngida tadqiqot natijasida olingan xulosalar bayon etilgan.

Kalit so‘zlar: innovasion rivojlanish, iqtisodiy inqiroz, inqirozga qarshi dasturlar, ITTKI, iqtisodiy o‘sish, bilimlarga asoslangan iqtisodiyot, siklik rivojlanish.

Аннотация. В статье раскрывается формирование иммунитета к системным рискам и экономическим кризисам через инновационное развитие (НИОКР) экономики путем анализа антикризисных программ. Также утверждалось, что увеличение расходов на инновации приведет к экономическому росту. В конце статьи представлены выводы исследования.

Ключевые слова: инновационное развитие, экономический кризис, антикризисные программы, НИОКР, экономический рост, экономика основанная на знаниях, циклическое развитие.

Abstract. The article reveals the formation of immunity against systemic risks and economic crises through the innovative development (R and D) of the economy by the analysis of anti-crises programs. It has also been argued that increasing of spending on innovation will lead to economic growth. At the end of the article, the conclusions of the research are presented.

Key words: innovative development, economic crisis, anti-crises programs, R and D, economic growth, knowledge based economy, cyclical development.

Introduction. At the beginning of the XXI century sharping fluctuations and declines in the world economy, as a result of globalization increasing the level of dependence of economic relations, decrease gross demand in world markets, continuous increase the level of foreign debts of countries, decrease the scope of economic sanctions against countries such as China, Russia and Iran by USA and EU the fact that the global financial and economic crisis, which began in 2008, has not completely ended and this requires further improvement of measures to combat crises in the world economy. According to the World Bank, at the end of 2019, the growth rate of international trade will be from 2,6 % to 1,5 %, while the growth rate of the GDP will be from 2,5% to 2,3% in the US, from 1,2 % to 1,1 % in EU countries and from 6,2 % to 6,1 % in China. The amount of mutual debts in the countries of the world is approaching 250 trillion US dollars and this is more than twice of the size of world GDP[1].

Literature review. By the beginning of the third millennium, the necessity of moving from industrial to an innovatively developed economy for developing economies of countries became a major issue on the agenda. This ushered in a new era

in the innovative development based on the knowledge economy. This is explained by the following factors:

One of the most important phases of the rise, recession, depression and revival of the long cycles, consisting of 4 stages in the economy, the revival phase occurs as a result of the efforts of producers of goods and services and the implementation comprehensive measures to restore the economic balance in the direct intervention of the state. Of particular importance is the participation of innovations in this phase [2];

According to the American economist Thurow's research on human capital, economic indicators, such as economic growth, income distribution in the economy, level and quality of production, social sphere are directly related to human capital, in other words, "the concept of human capital is the basis of modern economic research" [3];

In 1988, the American economist Lucas in his research, studied the role of human capital in the economic development of the country and concluded that the country's economic and human capital indicators are in direct proportion to each other [4];

According to Grayson, it is human capital that emerges as a factor of competitiveness, economic growth, and efficiency, not factory, equipment or production stock[5];

The process of accumulation of knowledge of human capital has a direct impact on the economic development and growth rates of the country, which is determined by the Organization for Economic Cooperation and Development [6];

An innovative economy, based on in-depth knowledge, prevents any crises[7];

While the first category of countries supplies only raw materials and low value-added products to the global value chains in the world economy, other categories of countries supply high value-added products. The second category of countries prepares the final product and re-exports it. Participation in the global value chain in this way is backward, while the first category of countries that supply intermediate products or raw materials to the final product manufacturer participate in the forward way. Countries participating in the global value chain backward will increase their export potential and the country will be less sensitive to external influences, which means that the country will be competitive [8].

Research and results. For the years 2008-2010 within the framework of anti-crisis programs several trillion US dollars were spent. In particular, in US 2,3 trillion US dollars [9], which 5,8 times more than the amount spent by this country on R and D in 2010 year. In EU were spent 2,6 trillion US dollars [10], in Japan 1,06 trillion US dollars [11] – which 7,5 times more than the amount spent on R and D in 2010, in China 0,57 trillion US dollars [12] and 0,22 trillion US dollars spent in Russia [13]. Accordingly, this figure is 4 in China and 10 times more than spent on R and D in Russia. But despite the fact that so many funds have been spent, the negative consequences and losses of the crisis have not been completely eliminated to nowadays.

One of the internal factors that caused the outbreak of the global financial and economic crisis, which began in 2008 year in Russia, is the low level of application of innovations in the economy. Because the innovative economy positively affects the pace of economic growth of the country and is one of the main elements of anti-crisis measures. For 2007-2014 years, the Innovation Index has had a growth trend in

developed countries. In particular, if the growth rates of 4,8 % in South Korea, 3,6 % in China, 2,4 % in the European Union and 1,0 % in the US were recorded, then this indicator is negative and is equal to -1,6 % in Russia [14]. The highest figure in this regard belongs to China, and as a result of the level of state policy of innovation development in the country, this figure is noted.

This financial and economic crisis, which began in the US, later appeared in the world in the form of a series of banking crises, a financial crisis, a migration crisis, a crisis of external sovereign debt and a crisis of raw materials. One of the peculiarities of this world financial and economic crisis is that when grouping the causes of the origin of the crisis, we can see that they are in harmony with each other. In particular, the habituation of living on credit was manifested in the form of an instrumental reason (unreasonable loosening of the lending practice) and a human behavior reason (the implementation of the current consumption to the account of future income). As a result, several difficulties were encountered in determining the nature of the crisis.

According to the results of the research of crises in the XIX-XXI centuries, since the first classical crisis occurred, economic crises are observed to repeat approximately every 15-20 years interval [15].

In the last years, the range of the development of the economy cycle was reduced up to The Kitchen cycle due to the increasing integration in the world economy, the acceleration of the globalization process and technological innovation. As a result, there is a need to put into practice the options of combating the crisis, which will show positive results at short period.

Under these circumstances, the formation of an innovative economy serves to increase the level of the national economy's immunity to risks. In recent years, the holding of the standard level of funds spent on innovative development (R and D) in the world used as a point for economic growth (figure 1).

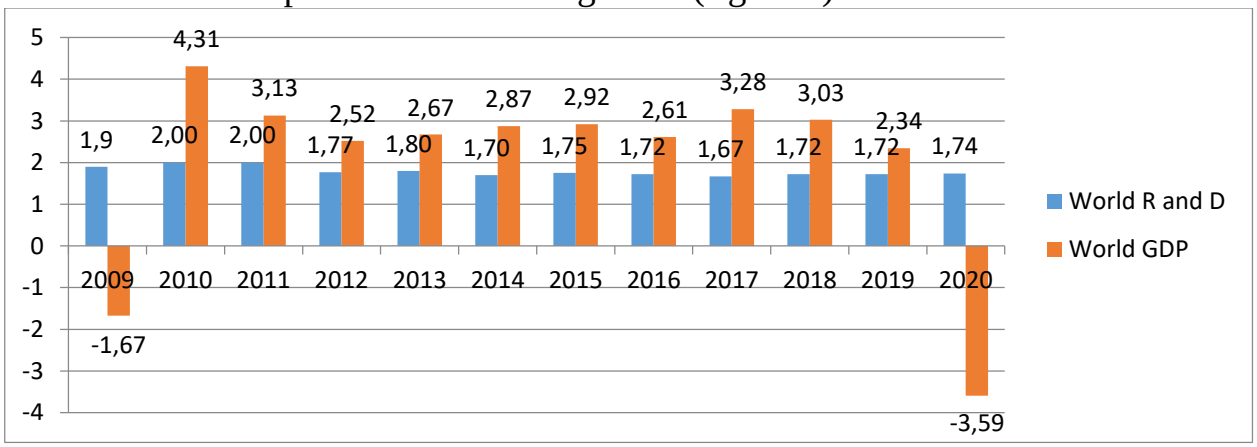

Figure 1. Interconnection between spending on R and D and GDP in the world [16], in percent

In 2010, the increase in the amount of expenses to R and D from 1,9 % to 2,0 % led to an increase in GDP from -1,67 to 4,31 %. By 2012, a reduction in the amount of expenses for R and D caused a decrease from 3,13 % to 2,52 % of the GDP. Over the following years, the reduction of spending on R and D was an impetus to the decrease in the volume of the GDP or vice versa. For the further growth of the world economy, it will require an increase in the amount of R and D. In 2020, due to coronavirus pandemic,

the additional annual growth rate of world GDP was -3,59 %. Further increase in spending on innovation is critical to achieving economic growth.

One of the main directions of measures in the EU countries in the framework of the fight against the crisis is the development of innovations. In the last years, the world's spending on R and D has been increasing. Even in the five countries mentioned above, the amount of funds spent in this sector has been growing steadily since 2010 to the present day. It is giving its effect in the fight against systemic risks and economic crises through innovative development of the economy. Because it is more expedient to fight against crises than to eliminate the negative consequences of the economic crisis and mitigate its losses.

In anti-crisis programs, measures such as the provision of tax benefits, support for the infrastructure and social sphere, the development of the Real sector, the stabilization of the banking system have taken place. It should be borne in mind that under the program against the financial and economic crisis, which occurred only in 2010 in world, 15-19 % of the GDP in developed countries was spent, 10 % in developing countries and 14,4 % in Russia.

As a result of the implementation of the functions of the programmes, economic growth in the countries was seen as follows (Table 1).

Table 1.

The growth rate of the countries' GDP [17], in percent

№	Countries	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	US	2,56	1,55	2,25	1,84	2,53	3,08	1,71	2,33	3,00	2,16	-3,49
	EU	2,21	1,82	-0,75	-0,05	1,57	2,30	2,01	2,80	2,11	1,56	-6,20
	Germany	4,18	3,93	0,42	0,44	2,21	1,49	2,23	2,60	1,27	0,56	-4,90
	Japan	4,19	-0,12	1,50	2,00	0,37	1,22	0,52	2,17	0,32	0,27	
	China	10,64	9,55	7,86	7,77	7,43	7,04	6,85	6,95	6,75	5,95	2,30
	Russia	4,50	4,30	4,02	1,76	0,74	-1,97	0,19	1,83	2,81	2,03	-2,95

If we take into consider given that the experts of the World Bank lowered the growth rates of GDP in US by the end of 2019 year, none of countries in the table could achieve GDP’s growth rates in 2010 year results. The need to launch a new driver for the development of the world economy is emerging. And this, of course, is done with the more implementation of innovations.

In our opinion, the innovative development of the sphere of production and services takes place in the following chain movement such as the domino effect, which plays a very important role in the fight against crises:

Innovative development of the sector of production and services → introduction of the latest science and technical achievements to the sector → the inflow of the infrastructure investments → the improvement of the infrastructure → use of energy-saving technologies → decline the cost of products and services → increasing competitiveness of products and services → the opportunity to enter the world market with products with high science consumption → quickly adapt to the conjuncture of the world market and strong acquisition of its own syngment → strengthening the competitiveness of the country → ensuring sustainable economic growth [18].

The indicator of innovative development is represented by the share of expenses allocated for R and D in the country's economy (Table 2).

Table 2.

The trend of change in spending on R and D in countries [19]

№	Country	Funds allocated to R and D over the years compared to GDP, in % (billion US dollars)					Change, compared to 2010, in %
		2010	2012	2015	2018	2020	
	USA	2,8 (395,8)	2,85 (436,0)	2,77 (496,84)	2,84 (552,98)	2,88 (580,20)	146,6
	Germany	2,4 (68,2)	2,87 (90,6)	2,92 (112,16)	2,84 (116,56)	2,84 (121,65)	178,4
	Japan	3,3 (142,0)	3,48 (157,6)	3,41 (164,59)	3,50 (186,64)	3,50 (181,10)	127,5
	China	1,4 (141,4)	1,60 (198,9)	1,92 (372,81)	1,97 (474,81)	1,98 (574,40)	406,2
	Russia	1,0 (22,1)	1,08 (26,9)	1,5 (55,77)	1,52 (58,62)	1,50 (58,92)	266,6

From the table data we can see that in the years after the crisis, there was a tendency to increase the expenditure on R and D in all countries. The largest figure belongs to China, which recorded in 2020 a result of 406, 2 % more than 2010 year. And in Russia was indicated 266, 6 % growth than 2010.

In innovative developed countries, the national innovation system is characterized by a high level of defense of the economy to external influences, and the negative consequences of the global financial and economic crisis, which began in 2008, were degree without sensation [20].

Conclusion. In summary, the innovative development of the economy serves as one of the main platforms in the fight against economic crises, by growth incomes, increase the role of the human factor in society, reduction the level of environmental pollution, the restoration of "green economy", the rapid adoption of the latest achievements of science and technology, increasing the competitiveness of the economy, achieving stable economic growth rates.

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