

Comparative Analysis of Innovation Processes in the CIS Countries

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Abstract

The article dwells on a retrospective analysis of a cyclic character of the development of economy processes in CIS countries with the help of productive dependencies. The authors research the existing structure of a cyclic crisis way out which can be connected only with the growth of world economy followed, probably, by a growth of consumer's demand for basic goods exported by CIS countries.

Keywords: *Innovation, Innovational process, CIS countries, unified economic space, economic cycles, modernizations of economy, innovational way of development*

1. Introduction

Over the past twenty years, the CIS countries went a long way in the field of institutional and structural reforms. The economy of the Commonwealth of the ongoing process of privatization of state property, formed the basic institutions of a market model, implement and develop methods of monetary and foreign exchange regulation and other tools of the market (Bessonov, 2004).

Before the economies of the CIS countries today faces a difficult task of choosing the way of further development, and much of its success would depend not only on the management policy of each country of the Commonwealth, but also on their joint efforts. On how effectively will be applied state institutional and financial arrangements, and will depend on the fate of the economies of the former Soviet Union. Rejecting the inertial path of development as inefficient continuation of construction developed market economy; the management of each of the countries of the CIS has chosen a policy of innovative development of its economy.

Creating a competitive economy by world standards in conditions of acute global competition requires a detailed analysis of the ways to create innovative development. To make a qualitative leap in the diversification of the economies of the Commonwealth and the transition to an innovative development model, the best path to the socio-economic and political specificity and minimizing possible risks and failures, is not possible without a historical analysis of the examples of international organizations aimed at disseminating innovation.

Since the topic of the CIS transition to innovative development raised repeatedly. In December 1993, agreements were signed Ashgabat "On the general conditions and the mechanism to support the development of industrial cooperation and business areas of CIS member states." In 1995, an agreement was signed on the establishment of common scientific and technological space of the Commonwealth. But even after the adoption of the Concept of

interstate innovation policy of the CIS up to 2005 a situation is only getting worse.

The main problem was not the weakness of the study of inter-state innovation policy of the CIS countries, and the elementary lack of demand for innovations. This is due to the fact that in Soviet times, the share of innovation - active enterprises amounted to about 50%, in CIS countries it does not exceed 10-15%.

2. The Basic Idea

The total share of CIS countries in the world market of high technology products is now no more than 0.3-0.4%, the share of machinery exports CIS countries does not exceed 6-8%, and commercial activity in the direction of innovation is extremely low.

Despite the fact that the joint efforts of the CIS countries in the field of innovative development and give some results fast enough and visible effect, to call it a unique and innovative impossible, because it is still a technological product of the Soviet era. In Commonwealth countries, the decline is observed in virtually all sectors of the knowledge-based industry, and it led to the virtual disappearance of entire direction of industrial science and some industries produce-stva³, which can not hinder the development of the issue of innovative technologies and their transfer into the sphere of practical use. Inter-republican division of labor and specialization of inter-industry within the single market of the USSR can dramatically reduce costs with the release of new products (Tsvetkov, 2010).

Resource-based economy in most CIS countries makes them dependent on the world prices for raw materials, and their share in the world market of high technology products, according to various estimates, is negligible, for example, in Russia only 0.3%, while the share of the US - 36%, Japan - 30%.

The reasons for the low innovation activity of the CIS countries may be called imperfect legal framework, lack of financial assets, opacity economies, poor investment economic climate. Major organizational and economic problems in the main innovative economic development of the CIS countries are: the problem of coordination of interests; technological and systemic problems.

When considering the organizational and economic problems of innovational development of the economies of the CIS worth noting diverse aspire-of science, business and government, which should contribute to the joint inclusion in the technological development of the economy. Society acquires sensitivity and motivation to innovate only when the government encourages, and then activates the process of business innovation.

In industrialized countries, the EU successfully used software innovative project management tools that allow interconnected resources, deadlines and implementing measures to ensure the efficient solution of important scientific and technical problems on the priority directions of development of the economies of the EU.

The selection of such programs should be based on the socio-economic priorities of, forecasts, objectives, structural policy under the following conditions:

- national significance of major structural changes aimed at modernization;
- novelty and interconnection projects necessary for large-scale dissemination of advanced scientific and technical achievements in CIS countries.

A possible solution could be here to speak is to form the CIS Coordinator for the development of innovative processes in the post-Soviet space, which aims to be the examination of innovative projects in order to avoid duplication of development, prioritizing development financing and building cooperation between scientific schools in the former Soviet Union with the aim of identifying mutually beneficial innovation projects.

Joint innovation policy of the CIS should be based on the following principles:

- support innovation, form the basis of the development of priority sectors of the economy;
- regulation of innovative activity on the basis of a competitive market mechanism;
- Promotion of international exchange of technology and investment cooperation;
- protection of the interests of innovative entrepreneurship.

The main functions of the external action can be attributed interstate innovation and science and technology policy and legislation. The functions of the internal effects of innovation in the participating countries of the CIS are the priorities of their national development and specific projects (tab. 1).

Table 1. The list and the content of programs of innovation policy in selected CIS countries

Countries	The program	content of the program
Azerbaijan	State programm Development Communication and Information technologies to the Azerbaijan Republic public for 2010-2012	Development of telecommunication and soil tum infrastructure and services, introduction of information and communication technology and development of electronic services in state and local government government, creating conditions for transition to an information society, and strengthening export and competitiveness of the potential of ICT
	National strategy of science Azerbaijan and state program for its implementation for 2009-2015	Enhancing the role of science in the development of economy of the country, the improvement of the system we control in the field of science and technology, the modernization of the scientific and technical infrastructure, integration of science, education and production, as well as increased in the effectiveness of scientific research and innovation policy
	The state program "Electronic Azerbaijan"	Automation of the entire set of control processes across the country are, improving the efficiency of state public administration and reducing costs.
Moldavia	The concept of development innovative entrepreneurship at long term (2010-2020)	1. forming of institutional mechanisms of effective implementation strategy directions of innovational business in the republic the public; 2. an effective competitive innovation entrepreneurship based on innovational changes, strategic interactions with big business, coherence with the bodies Management at all levels; 3. enhanced Positioning innovative businesses in economy based on a stable economic growth
Belarus	Promotion of state innovation activities	1. For the science and technology parks, technology transfer centers and rubber dents science and technology parks income tax rate is set to 10%; 2. It is possible to obtain of funds from the national budget that the organization of activities and development of material and technical base venture capital organizations; 3. No duty is carried detecting the mandatory sale of for-Tran currency received venture capital organization from sales of goods and property rights on objects intellectual property
Ukraine	The law "On Special investment regime and innovation activities technical parks "	Primary accumulation of innovation political capital, mainly positive result of which can be considered the adoption of the State and society innovative doctrine of necessity and priority in this direction
	The Law "innovation activity " since 03.06.2010	Defines the legal, economic and organizational principles of state regulation of innovation activities in Ukraine
Kazakhstan	The National Fund welfare "Samruk-Kazyna"	The development of a national innovation infrastructure
	Program for the formation and Development of National innovation of the Republic of Kazakhstan since 2005-2015.	Formation of the Innovation System open type, providing the establishment of a competitive final product based on the use of domestic includes four main elements - it's scientific potential, innovative entrepreneurship, innovation and financial infrastructure
Tajikistan	The program is innovative development of the RT for 2011-2020. (20 April 2011g.№ 227) and strategic objectives RT Law "On Science and state Technology Policy " since 31.12. 2008 №477 The Strategy of the Republic of Tajikistan in the field Science and Technology for 2007-2015	Formation of an effective innovation system that facilitates improve the technological level and competitiveness of production, the output of innovative products on the domestic and foreign markets, growth import, accelerate social and economic development and the achievement NIJ's national interests.
Uzbekistan	The project "Support to the the field of innovation policy and transfer technologies "	Strengthening the capacity of the Government and relevant authorities to development, implementation and monitoring innovation policies. The project is implemented in three main directions: support in the development of innovative development program in Uzbekistan; capacity-building; assist in enhancing the technology commercialization and innovation
Kyrgyzstan	The evelopment Strategy Kyrgyzstan for 2007 2010	Creating the conditions for saturation competitive domestic production of internal and external markets through the use of scientific capacities, as well as the creation of branched innovation infrastructure structure, which should include research institutes, industrial enterprises in the form of public and private entities, ensuring the development and maintenance of all stages of the innovation process.

The mechanism of interaction at the international level to support innovation must take into account the views of all directly or indirectly interested CIS countries and to create conditions for coordinated action to stimulate innovation. For the implementation of socially-oriented innovation policy should provide the main priorities of the financial and economic stability, as well as leading direction of the economy based on innovation strategy.

CIS countries in the arsenal of competitive advantages have the unique natural resources, diversified industry base, sufficient scientific and technical potential, which should be some additional stimulus to the production of high-tech products. Stimulating the development of cooperation and integration of science and industry of the CIS countries is the main direction of the state support the development of knowledge-based industries (Vardomsky Shurubovich, 2008).

Accelerate the development of high-tech industries will contribute to inter-state program of formation and development of infrastructure serving the innovation process.

3. Analytical Section

Particularly noteworthy early formation of the exchange of information between the countries of the Commonwealth, responds to the needs of technological and structural change. It is necessary to the formation and development of the interstate system information centers involved in the collection and analysis of information necessary for the implementation of innovative enterprises as strategic planning, and ongoing management.

Status and development of high-tech complex states participants CIS global trends are not fully responsible. In the 90 years of the reproductive cycle of creation and innovation has been broken, disappeared very important link between developers and users.

Although since 2000 there has been a slight increase in innovation active enterprises, their number is not enough in comparison with the performance of the EU countries. The share of high-tech products in the total volume of production is 3-4.5% when the threshold value according to expert estimates, is 15%. Here, one of the primary instruments of cooperation of the CIS countries may make interstate target complex programs in accordance with the structural adjustment programs of production of the allied states. Such programs should include a set of measures aimed at the movement of capital in the most promising sectors of the economy, as well as curtailing inefficient, uncompetitive sectors and industries, to promote the strengthening of targeted structural policy, providing the vital systems of the economy, enhance product competitiveness, preservation and development of scientific -Technical, production and personnel capabilities (Zoid, 2011).

State policy of the Commonwealth in the field of innovation and formed an innovative infrastructure is not united by one concept of development, which ultimately leads to a lack of proper motivation and responsibility in the field of technology transfer. Here known example is the situation in 2008, when the CIS Executive Committee made a program of innovation cooperation of CIS member states for the period up to 2020. At first customer for the Ministry of Economy of Ukraine was supposed to, but the Ukrainian side decided to "give way" Russian leadership roles in such predicate endeavor. After that customer for innovative development of the CIS was determined gone into oblivion Russian Federal Agency for Science and Innovations.

Therefore, we can confidently say that the CIS member states, with its powerful innovative potential, is still not able to implement it in appropriate quantities. The lack of it is the current strategy of innovative development of the Commonwealth countries threaten their national security. This is due to the fact that the CIS is gradually losing its ability to provide its own scientific-industrial complex needs of their economies due to the progressive increase in the backlog from the developed countries, which could lead eventually to the great dependence on external sources (Tsvetkov, 2009).

To solve these problems is possible only in the framework of a new interstate innovative space that combines the resources of national innovation systems and gives stability and, most importantly, the systemic nature of innovation development.

CIS strategic advantages to solve the above problems can perform the following resources:

- development of mineral resources base and transport infrastructure; technological capacity defense and related civil industries;
- reservation of mass capacity production, relatively cheap products, the ability to find sales in the domestic
- the market, as well as in the markets of a number of developing countries; scientific and technical potential.

However, we must take into account the negative factors such as:

- shortage of financial resources, directly affecting the innovative activity of production of the real economy;
- technological backwardness and, as a consequence, low competitiveness of certain industries;
- undeveloped small innovative enterprises with the flexibility to rapidly changing market conditions;
- the absence of extensive innovation infrastructure; poor work in the field of protection of intellectual property rights.

On the other hand, today we can cite many examples of countries that do not occupy a leading position in innovation, but demonstrate impressive success of innovative development. For example, Turkey, Thailand and Malaysia are increasingly integrated into the global economy its economic system. Moreover, they are often even ahead of the pace and quality of development in certain areas recognized scientific leaders. Therefore, it is not just whether a country has a highly developed science, diversified industry and educated population, but also in the extent to which it contributes to a dynamic economy in response to the evolving needs of the Government markets. The economy may be called innovative if in all sectors present commitment to innovation in science, in business and in government (Bessonov, 2002).

An important disadvantage of innovative economic development strategies in the CIS countries is almost a direct copy experience of industrialized countries. At the same time national characteristics and the extent to which prior to that market reforms are not included. As a result, many of the measures taken for the formation of national innovation systems do not produce the desired result. Thus, a necessary attribute of innovative development in the West is a venture capital financing. But in the Commonwealth countries, due to the underdevelopment of the financial system and the lack of appropriate institutional and legal mechanisms are not formed the prerequisites for the spread of such experience.

The trade sector can be a major "field", which will be implemented industrial and innovative development of the CIS countries. Consequently, the trade policy of the Commonwealth should be aimed at creating conditions for the development of competition - the main mechanism of self-regulation of the market economy. Further coarse protection of the domestic market from imports only exacerbate being left behind manufactured goods CIS counterparts from other countries, both in price and consumer properties.

The main objective of the trade policy of innovative development of the CIS countries should act to create a single economic space in the Eurasian region with its closest partners in the CIS. Therefore, the Customs Union within the framework of the Russia-Kazakhstan-Belarus needs to expand and effectively refined. In this benchmark will be the transformation of the former Soviet Union into a regional high-tech export-import, investment, financial and trading center.

The economy of the CIS countries during its existence, as noted above, has gone from being a single economic complex (1991) to a group of interrelated economies of Independent States (2011). Economic integration in the context of modernization is more typical. It reflects the laws of motion forms of interstate cooperation from simple to complex. That is, the creation of a free trade area to a customs union - a common economic space, and then, perhaps, to a full economic union, it is assumed confederal arrangement of its member states (Eco-Inform, 2010).

A distinctive feature of the post-Soviet economic configuration to building relationships in the CIS - the obvious dominance of Russia, which accounts for over 68% of the total regional GDP, 76-77% of the total oil production, 69% of gas production, 59% of electricity production, 67-68% of the total exports of goods and services (Kovalev, 2008).

In total GDP of the four largest CIS countries (Russia, Belarus, Kazakhstan, Ukraine) Russia accounts for almost 80% of GDP in the countries of the Eurasian Economic Community (Russia, Belarus, Kazakhstan, Kyrgyzstan, Tajikistan) - almost 90% of GDP in the countries of the Customs Union (Russia, Belarus, Kazakhstan) - 90%. The entire GDP of the CIS countries with low-income countries (Armenia, Georgia, Kyrgyzstan, Moldova, Tajikistan, Uzbekistan) does not exceed 7% of Russia's GDP.

The Russian economy is in 160-165 times greater economies of Kyrgyzstan, Moldova and Tajikistan, and is about 100 times greater than the economies of Armenia and Georgia. GNI per capita for Russia in 2010 was 3 times higher than in Ukraine, 6.5 times higher than in Moldova, in 11-16 times higher than in Uzbekistan, Kyrgyzstan and Tajikistan.

Modernization of traditional (export and import) and the creation of new industries are inextricably linked with investment activity. The highest rate of investment in fixed assets in the 2000-2010 bienniums grew up in Armenia, Azerbaijan, Belarus, and Kazakhstan (Table 2). However, in terms of ratio of investment to GDP significantly closer (Table. 3. Note the progress of Tajikistan, Armenia and Moldova.

In terms of investment per capita differences between countries for the 2000-2010 biennium. not decreased. Backlog of Tajikistan, Kyrgyzstan and Uzbekistan from Caucasian and European CIS countries during this period has increased significantly. Not reduced the backlog of Ukraine from Russia, Kazakhstan and Belarus. In terms of investment per capita in Ukraine are very close to Armenia.

Table 2. Indices of investment in fixed assets in the CIS countries, in %

	1995 by 1991.	2000 by 1991.	2010 by 1991.	2010 to 2000.
Azerbaijan	57	207	2377,3	1148,5
Armenia	57,6	94,8	318,5	336,0
Belarus	37	50	205	410
Kazakhstan	16	30	123,8	412,7
Kyrgyzstan	58	71	100	140,8
Moldova	17	11	19	172,7
Russia	36	31	65,7	211,9
Tajikistan	43,8	39,2	287,4	733,2
Uzbekistan	52	78	231,7	297,1
Ukraine	31	27	56,8	210,4

Table 3. Investment in fixed assets in the CIS billion. Dollars. US

	2000	2005	2006	2007	2008	2009	2010
Azerbaijan	1,1	5,7	6,8	8,7	12,1	9,6	12,1
Armenia	0,2	1,0	1,5	2,0	2,8	1,6	1,6
Belarus	2,3	7,0	9,5	12,1	17,3	15,5	18,0
Kazakhstan	4,2	18,2	22,4	27,7	35,0	31,1	32,4
Kyrgyzstan	0,2	0,3	0,5	0,6	0,9	1,0	1,0
Moldova	0,1	0,6	0,8	1,3	1,8	1,0	1,0

Table 4. Investments in fixed assets of the CIS countries, as a % of GDP

	2000	2005	2006	2007	2008	2009	2010
Azerbaijan							
Armenia	20,8	43,2	32,4	26,3	25	22	23
Belarus	10,5	20,4	23,4	21,7	24	19	17
Kazakhstan	20,2	23,2	25,7	26,8	29	32	33
Kyrgyzstan	23,0	31,9	27,7	26,4	26	27	22
Moldova	14,3	12,0	17,9	15,8	18	21	22
Russia	7,7	20,0	23,5	29,5	30	19	17
Tajikistan	15,8	16,7	17,6	20,0	21	20	20
Uzbekistan	10,0	8,7	14,3	21,6	25	18	18
Ukraine	33,9	45,7	39,0	31,7	35	48	50
Azerbaijan	22,6	19,7	18,2	19,3	25	26	25
Armenia	13,7	21,1	23,0	26,1	25	17	14

Pretty much the CIS countries differ in the structure of financial resources used for modernization. Most of the countries in question has a negative trade balance, which is constantly growing, worst of all, this situation in Belarus and Ukraine. CIS countries partially and fully align its labor export, services, external borrowings and foreign financial assistance.

The surplus of oil and gas have countries: Azerbaijan, Kazakhstan, Russia, Turkmenistan and Uzbekistan. And with the growth of prices for hydrocarbons and other raw materials increases and surplus per capita.

Different security export resources explains the big differences between countries on sources of fixed capital investment. In some countries a high proportion of foreign investment: in 2010. Armenia - about 18%, Kyrgyzstan - 20%, Uzbekistan - about 29% and Moldova - more than 17%. Tajikistan in the implementation of its largest investment projects is largely based on foreign investment (in 2007. This figure was 73%). In connection with this, the share of foreign investors in the total investment in fixed assets in Tajikistan in 2010 was 39%.

A high proportion of foreign investment in capital investments in Azerbaijan and Kazakhstan, which are widely involved for development of oil and gas and other natural resources. In 2010, it was equal to, respectively, 40 and 24%. In Belarus, Russia and Ukraine, the share of foreign investors does not exceed 7%.

Investment activity in countries such labor-exporting, Armenia, Kyrgyzstan, Moldova, Tajikistan and Uzbekistan are directly or indirectly based on workers' remittances. This source plays an important role in investing activities in Azerbaijan and Ukraine. In the structure of investments in Armenia important are the means of the Armenian diaspora.

To attract foreign investors in a number of CIS countries introduced fairly liberal regime of business activities (Protasov, 2007). According to the index of economic freedom as calculated by the Heritage Foundation in 2011. among

179 countries, Armenia is in 36th place, Kazakhstan - 78, Kyrgyzstan - 83, Azerbaijan - 92, Moldova - 120, Tajikistan - 128, Russia - 143, Belarus - 155, Ukraine - 164 Turkmenistan - 169, Uzbekistan - 163 place. According to the classification of the index among CIS countries Armenia, Kyrgyzstan and Kazakhstan are among the countries with "moderately free economy." The countries with "mostly unfree economy" were classified as Azerbaijan and Tajikistan. The rest were classified as countries with "unfree economy."

CIS countries can be distinguished by initial conditions, resources, institutions and the dynamics of modernization and, quite roughly on specific outcomes. As a result of the composite can be considered change of position in the ranking of countries on Competitiveness Index, published annually by the World Economic Forum (The Global Competitiveness Report), 2005 and 2011. For a specified period improved their position: Russia (up from 75 to 63 place) and Azerbaijan (69 to 57). Kazakhstan, Ukraine, Moldova, Armenia, Tajikistan and Kyrgyzstan have worsened their position and remained at 72, 89, 94, 98, 116 and 121 respectively in the rating. At the same time in Belarus, Uzbekistan and Turkmenistan index calculation was not performed (Zoid, 2001).

4. Conclusion

The essential difference of economic potential of the CIS countries makes a difference in the objective interests of the parties in the development of trade and economic cooperation. For Russia as the dominant country, the main interest - geo-economic, the implementation of which is stretched over time and requires a clear sequence of actions.

Thus, our studies show that the CIS countries do not have a highly developed and diversified manufacturing industry and, therefore, intra-developed cooperative ties that are the basis of the integration process (the basis for the functioning of a single economic space). They complement each other in the cross-sectoral level, which is reflected in the structure of mutual trade. The predominance of fuel and raw materials, are heavily dependent on world markets, in Russia's trade with CIS countries does not lead to a closer relationship between the national economic systems. Modernization of the Russian economy in relation to the CIS, in our opinion, should be considered in several aspects, one of them is connected with an understanding of the extent to which cooperation with the CIS countries can contribute to solving problems of structural renovation of the Russian economy.

At the same time, based on the innovative potential of the post-Soviet countries, Russia enhances the enjoyment of creative and constructive modernization. However, for the better use of these opportunities is necessary to establish a multilateral basis of the relevant institutional and financial-credit mechanism in the form of international funds to support research and innovation projects, development of the international system of industrial parks and venture capital financing, by removing barriers to international cooperation in the area of innovation. Structural modernization of the Russian economy is most relevant to the idea of creating a single economic space. Modernization of the Russian economy on an innovative model of multilateral cooperation to revitalize the post-Soviet countries, because it will require removing barriers to the development of scientific and industrial cooperation.

In general, the successful course of modernization in the countries of the CIS, of course, accelerate the process of modernization in other countries through scientific and technical cooperation, investment and technology exports. Due to this, the active interstate innovation policy will contribute to the preservation and development of scientific and technological capacity in the countries of the former Soviet Union. However, it is important that the basic mechanisms of modernization in different countries were incompatible.

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