# INNOVATION AND REGIONAL POLICY TRANSFORMATION

***Yuriy KOZAK*[1]*, PhD, Professor,***
***Odessa National Economic University***
***Olga IERMAKOVA*[2]*, PhD, Associate Professor,***
***Odessa National Economic University***

*Imperfect innovation policy in Ukraine led to a number of problems in the sphere of innovations, such as: low national spending on science, poor national system of protection and management of intellectual property, inefficient organization of the innovation system, weak interaction of science, education and production in the innovation process, lack of foreign and domestic investment in high-tech business, reducing state support of innovation projects within the technological parks, low innovation activity of universities, unsatisfied indicator of cluster development, specialization of TNCs affiliates located in Ukraine at least innovation levels of production process – components assembly. Conceptual basis of regional innovation policy transformation in Ukraine should become the transition of clan-oligarchic economic model to the economy that built on free entrepreneurship. The effectiveness of regional innovation policy in Ukraine could be increased by implementing measures of small and medium enterprises support, clusters and regional innovation infrastructure development, usage of resources of social capital.*

***Key words****: innovation development, regional policy, clan-oligarchic model of the economy, small and medium business.*

*Politica de inovare imperfectă în Ucraina a dus la o serie de probleme în domeniul inovațiilor, cum ar fi: cheltuielile scăzute la nivel național în domeniul științei, sistemul național slab de protecție și de gestionare a proprietății intelectuale, organizarea ineficientă a sistemului de inovare, interacțiunea slabă a științei, educației și producției în procesul de inovare, lipsa investițiilor străine și autohtone în afacerile high-tech, reducând sprijinul de stat al proiectelor de inovare în cadrul parcurilor tehnologice, activitatea de inovare scăzută a universităților, indicatori nemulțumit de dezvoltare a grupurilor, specializării afiliate CTN situate în Ucraina, la niveluri mai mici de inovare ale procesului de producție-asamblare componente. Drept bază conceptuală de transformare a politicii de inovare regională în Ucraina ar trebui să devină tranziția modelului economic – clan oligarhic al economiei care a construit antreprenoriatul liber. Eficacitatea politicii regionale de inovare din Ucraina ar putea fi majorată prin măsuri de sprijin a întreprinderilor mici și mijlocii, grupurilor și dezvoltarea regională a infrastructurii de inovare, utilizarea resurselor de capital social de punere în aplicare.*

***Cuvinte cheie:*** *dezvoltare de inovare, politică regională, modelul – clan oligarhic al economiei, afaceri mici și mijlocii.*

*Несовершенство инновационной политики в Украине привело к ряду проблем в области инноваций, таких как: низкая стоимость отечественной науки; слабая национальная система охраны и управления интеллектуальной собственностью; неэффективная организация инновационной системы; слабое взаимодействие науки, образования и производства в инновационном процессе; отсутствие иностранных и отечественных инвестиций в высокотехнологичные предприятия; снижение государственной поддержки инновационных проектов в технологических парках; низкая инновационная активность университетов; неудовлетворительные показатели развития специализированных групп, связанных с ТНК, расположенных в Украине; более низкий уровень инноваций в процессах промышленно-производственной сборки. Концептуальной основой трансформации региональной инновационной политики в Украине должно стать создание переходной экономической модели – клановая*

[1] ***© Yuriy KOZAK, yuriy_kozak@mail.ru***
[2] ***© Olga IERMAKOVA, k.mev@oneu.edu.ua***

*олигархическая экономика, которая построит экономику свободного предпринимательства. Эффективность региональной инновационной политики в Украине может быть увеличена за счет мер по поддержке малых и средних предприятий, группового и регионального развития инновационной инфраструктуры, использования ресурсов социального капитала.*

***Ключевые слова:*** *инновационное развитие, региональная политика, модель – клановая олигархическая экономика, малый и средний бизнес.*

***JEL Classification: O3; O16; E2; E19***

**Introduction**. The main task of the current economic policy of Ukraine is to transit from resources-based economy that is able to provide benefits in the short term, to the innovation-based economy that is the key to long-term development. On the one hand, the innovation system of Ukraine has the following important competitive advantage as the high general level of education, the strong scientific base that is inherited from the Soviet Union. On the other hand, the innovation system of Ukraine has a number of problems. Among them – the lack of effective interactions between science and businesses, unfavorable framework conditions for innovation and poor infrastructure. While the solving of the problem of improving the framework conditions is the national level task, the establishment of interaction among participants of the innovation process and the development of innovation infrastructure are the tasks that require the active role of regions.

In practice, the regional policy of the Soviet era was based on the "levelling-off" principle in order to overcome the economic lag of certain territories. At first glance, this approach contributed to socio-economic development of depressed regions, but in comparison to the more developed regions the lag maintained or even increased. Moreover, this approach led to the passivity, lack of initiative, rooting of passive behaviour of depressed regions that are not looking for their own development paths and hoped only on support from the center. Much of this attitude remained in the region of the independent Ukraine. However, international experience shows that a region in order to be competitive in today's environment is necessitated to take an active measures for mobilization of their endogenous development potential. In this context, the development of regional innovation systems will become a prerequisite for improving the competitiveness of regions of Ukraine in the conditions of the innovation-based economy.

**Theoretical aspects** of regionalization of innovation policy are based on scientific works of many domestic and foreign scholars, including Heyts V.M., Kyzym M.O., Lazareva E.V., Fedulova L.I., Schumpeter J., Porter M., Krugman P., Hospers G., Etskovyts G., Leydesdorf L. and others.

However, the problem of the efficiency of regional innovation policy in terms of clan-oligarchic model of economy that is usual for the post-Soviet states, including Ukraine, remains unsolved.

The effectiveness of innovation policy in Ukraine in comparison with some of the CIS countries may be indicated by the studies of the World Intellectual Property Organization that proposed the annual ranking of the world countries due to their innovation development. Indicators of innovation in the CIS countries and the leaders of innovation development in 2012 are presented in Table 1.

**Table 1**

**Indicators of innovation in some CIS countries and leaders of innovation in 2012**

| Countries | Global Innovation Index (among 141 countries) | Sub-index of expenditures on innovation | Sub-index on innovations output | Index of innovation efficiency | Expenditures on science,% of GDP |
|---|---|---|---|---|---|
| Russia | 51 | 42,0 | 33,8 | 0,8 | 1,3 |
| Ukraine | 63 | 38,0 | 34,2 | 0,9 | 0,9 |
| Belarus | 78 | 37,7 | 28,1 | 0,7 | 0,6 |
| Kazakhstan | 83 | 41,4 | 22,4 | 0,5 | 0,2 |
| Switzerland | 1 | 68,0 | 68,5 | 1,0 | 3,0 |
| USA | 10 | 66,3 | 49,1 | 0,7 | 2,8 |
| Germany | 15 | 58,8 | 53,7 | 0,9 | 2,8 |
| Japan | 25 | 61,3 | 42,0 | 0,7 | 3,4 |
| China | 34 | 42,7 | 48,1 | 1,1 | 1,5 |

***Source: The Global Innovation Index 2012.-The World Intellectual Property Organization – www.globalinnovationindex.org.***

As it can be seen from the Table 1, the leader among the CIS countries by the Global Innovation Index in 2012 is Russia, followed by Ukraine, Belarus and Kazakhstan. Ukraine trailed the leader – Switzerland – by 63 positions that is proportional with countries' expenditures on science. If the global leader of innovation development – Switzerland – spends on science 3% of its (!) GDP, Japan – 3.4%, the U.S.A and Germany – 2.8%, in Ukraine only – 0.9%.

Another important index is the efficiency of innovation that is ***ratio between the cost of innovation and its output.*** Studies revealed that the highest efficiency of innovations is in China and Switzerland. The leader among the CIS countries by this indicator is Ukraine, where the innovation efficiency index was 0.9% that puts the country by this indicator on the same level with Germany. This high rate of innovation output demonstrates the powerful, but unrealized innovation potential of Ukraine.

The analysis of innovation policy in Ukraine revealed a number of key features. First of all, it should be noted that the majority of scientific research are provided by public research institutions. As shown in the Table 2, the CIS countries are far behind the leaders of innovation by business expenditures on research. For example, in Japan this index is 78.2%, while in the CIS countries – less than 30%.

**Table 2**

**Indicators of interaction between education, research and production in the innovation process in some CIS countries and leaders of innovation in 2012**

| Countries | The research, funded by business % | Cooperation between universities and industry, ratio | State of cluster development, rate |
|---|---|---|---|
| Russia | 25,9 | 42,6 | 28,6 |
| Ukraine | 26,6 | 41,4 | 35,8 |
| Belarus | 28,8 | - | - |
| Kazakhstan | 13,5 | 32,3 | 41,5 |
| Switzerland | 68,2 | 79,6 | 61,9 |
| USA | 67,3 | 78,5 | 63,2 |
| Germany | 67,3 | 69,3 | 62,0 |
| Japan | 78,2 | 67,6 | 66,8 |
| China | 71,7 | 58,8 | 64,4 |

***Source: The Global Innovation Index 2012.-The World Intellectual Property Organization – www.globalinnovationindex.org.***

Industrial and Financial Group and transnational corporations (TNCs), that, as a rule, has strong research centers, supported by significant financial resources, are the powerful catalysts for innovative development of industrialized countries. The role of the TNCs in the innovation sector is particularly noticeable in the newly industrialized countries of the South East Asia. However, in Ukraine the TNCs still did not significantly affect the activation of innovation processes.

The key feature of TNCs in Ukraine is that their Ukrainian branches provide usually one of the least innovative parts of the production chain – assembling. Thus, the important effect of innovation on the overall economic progress – their diffusion (Schumpeter J.) [2] – stays away from the economy of Ukraine.

Furthermore, the predominant role of low-innovative industries (particularly in the commodities sector) puts other industries at a disadvantage, and further strengthens the unfavorable economic structure causes low demand for knowledge.

The situation of inefficient innovation system enhanced by the poor interaction of science, education and production in the innovation process. It is proved by the low index of cooperation between universities and industry in Ukraine. For example, in Switzerland and the U.S.A rate is close to 80, and in Ukraine – 42.6.

An important condition for establishing links between all participants of the innovation process in the country is the cluster development. Ukraine has only started to develop and implement the principles of the cluster approach. By the cluster effectiveness coefficient Kazakhstan is a leader among the CIS countries – 41.5, which is the result of systemic reforms of industrial policy on the principles of the cluster approach. Ukraine lags far behind by this indicator, its cluster effectiveness coefficient was 28.6, and in the leading countries this figure exceeds 60.

The major obstacles of unsatisfied links between science and industry in innovation sector of Ukraine are the following:

- low domestic demand for innovation, even commercially profitable, that is caused by undeveloped innovation products markets and relatively low innovation activity of the business sector;
- mismatch of supply and demand for innovation indicates a poor interactions between producers of knowledge (research institutes, universities) and its consumers (producers, entrepreneurs). Often research in public research institutes are conducted without reference to the actual needs of the real sector that cases the problem of the practical realization of the received scientific results [3].

The national legislation of Ukraine in the sphere of innovations is imperfect and does not contribute to solving urgent problems in this area.

In 2008 the State Economic Program "Development of innovation infrastructure in Ukraine for 2009-2013" was adopted, but, unfortunately, it didn't change the situation in the Ukrainian innovation sector for the better. This is due to lack of budget financing of the planned activities of the program, and enterprises have to finance their own innovative programs, but the majority of businesses, especially small and medium, doesn't not have financial resources to carry out their own research and innovation projects. The number of enterprises that are engaged in innovation activities in 2011 is 1,679 or 16.5% of all industrial enterprises [4].

There is a problem of low innovative activity of universities in Ukraine, as well as the gap between the academic and university research. For example, in 2008-2010, universities and other higher education institutions offered 2% of technological innovation in the country, while public research institutions – 4.5%, and enterprises – 25%.

Implementation in Ukraine the effective tool for innovation development – clusters is hampered by the following factors: absence of the national cluster program, absence of a common information base of cluster initiatives, lack of the experience of the clusters functioning in Ukraine, undeveloped cluster institutions: regional development agencies, investment promotion bureaus, etc., absence of cluster development coordination establishment, nonsystem character of cluster studies in the Ukraine; declarative rules on cluster specific implementation mechanisms, lack of effective mechanisms and infrastructure for cluster functioning.

Implementation of innovation projects within technology parks has created the competitive innovation products that constantly increase their output and transfers to budget and extrabudgetary funds. Thus, during the time of their functioning it was produced 11.4 billion of innovation products, 14% of this amount was realized abroad; transfers to budget and state funds almost twice exceeded all kinds of state support during this period; 3.1 thousand new jobs were created. However, these results related primarily to the period of 2000-2004. Abolishment of the majority of measures of technological parks state support badly influenced on further functioning of these structures.

Eleven special (free) economic zones (SEZ) operate in Ukraine at the moment. But, according to the Law of Ukraine №2505 from 25.03.2005 №2505 "About Amendments to the Law of Ukraine "About the State Budget of Ukraine for 2005" all enterprises in Ukrainian SEZ function and realize investment projects in the general taxation regime.

**The national system of protection and management** of intellectual property is also a weak unit in the innovation development and requires improvements. Ukrainian legislation excludes the state, research institutes and universities from the innovation process – the authors of patents in Ukraine could be only scientists, but alone they are unable to implement their inventions into practice. For example, in the USA it was adopted the Bayh-Dole Act in 1980 that clearly defined universities as patent holders, and in the case of patent inefficient usage all rights on it transfer to the state.

In addition, there is a lack of foreign and domestic investment in high-tech business in Ukraine. This sector isn't attractive for investors because of imperfect legislation and lack of stability.

Analysis of framework conditions for the implementation of innovation policy in Ukraine found that the vast legislation basis and regulations in the innovation sector don't encourage innovation sector,

and innovations didn't become a priority for the majority of Ukrainian enterprises. For Ukraine with the powerful innovation potential these trends are abnormal. What is the reason for ineffective innovation potential usage in Ukraine?

The president of the Center of Economic Reforms, Doctor of Economics V.Lanovoy in his research sees the answer to this question in the oligarchic structure of the Ukrainian economy, and we agree with him at this point. In the Ukrainian realities, unlike Western countries, oligarchic economic structures are built as multi-sectors and multi-levels corporations with a limited number of major owners (usually less than 10 people). In fact, oligarchs are actors of the financial business, they aren't entrepreneurs. Their goal is not to develop and exceed competitors, but only to benefit financially. With access to the political lobbyist instruments of obtaining economic profit oligarchs do not set themselves the task of finding and implementing innovative solutions. As a result, they receive profits without technology upgrades, production costs reduction and product quality improving. The oligarchs do not represent a deliberate national entrepreneurship that is inseparable from their own companies, their business, local markets and regions.

In contrast to the oligarchic structures small, medium businesses, large corporations and national mono-sector local affiliates of TNCs provide therapeutic effect on the economy, on its structure and financial position, do not require active government regulatory actions to prevent any negative consequences of their operation. These types of businesses are focused on market competition, innovation, financial responsibility for performance, horizontal expansion of relations and cooperation with partners, intense national development. However, SMEs are in the most difficult situation in Ukraine. It is completely cut off from internal and external financial sources, is under the pressure of governmental bodies, and therefore withdraw from the market, emigrated or hiding in the informal sector. Thus, necessary for development SMEs are suppressed in Ukraine, resulting in the degradation of the national economy [5].

**Conclusions**. Based on the above, the transformation of regional policy in Ukraine should focus on the following tasks:

1) building a free innovative entrepreneurship through active support for small businesses and encouraging entrepreneurship competition;

2) facilitation of the formation of regional clusters of small and medium enterprises;

3) development of regional innovation infrastructure: technology parks, technology transfer centers, innovative engineering centers, venture capital funds, regional development agencies, etc.;

4) the development of social capital in the region – the resource of interpersonal relations based on trust and cooperation between all actors of regional development.

The key to overcoming existing problems in the innovation sector of Ukraine is the orientation of innovation policy not only on the development of scientific and technological activities, but also on the development of regional innovation systems that are based on relationships between the main actors of the regional innovation process. The traditional view of innovation as a linear process (science – technology – commercial product) must be changed by the understanding of innovation as a result of simultaneous interaction of a large number of participants that are combined in a complex system.

This approach to innovation policy, in our view, will give impetus to the development of powerful innovative potential of Ukraine and real transition to innovation-based economy.

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