

**Macroeconomics**

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**TRANSFORMATION OF THE INNOVATIVE
DEVELOPMENT CONCEPTS
OF THE UKRAINIAN ECONOMY**

Abstract

The problem competitiveness decrease in the domestic sphere of science and technology and intellectual capacity outflow were explored. The comparative analysis of the global competitiveness index, which confirmed the existence of the policy «gaps» in the innovative development of national economy was performed. The lack of the strategic competitive advantage prerequisites was indicated. The structure of export of goods in Ukraine according to innovative technologies level was analyzed. The analysis results of institutional mechanisms designed to ensure the transition of the national economy to an innovative model of development were synthesized.

Key words:

Innovative development, competitiveness, innovation, technology, technological set-up, knowledge intensiveness.

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Introduction

Formulation of the problem. In the era of the knowledge based society (knowledge society, *k*-society) when the struggle for intellectual leadership takes prerogative in the competition, the intensive innovation development of economy became the most significant factor for effective structural change. Globalization process significantly transforms the environment of the innovative mechanisms building to ensure strategic transformation of the economy, increasing the country's competitiveness and quality of life. Lack of innovation leverages to influence the harmonious transformation of society processes in the state and supranational regulation systems makes it impossible to obtain synergy at all economy management levels. In addition significant market turbulent environment creates new demands that confirm no other but the innovative development.

Ukraine's economy transition to a market economy led to the saturation in many market segments and caused the emergence of new market niches, that on the one hand, increased the innovation-based competition, on the other hand – it created a wide range of existing and potential market participants. However, non-systematic, although important, transformations in the domestic economy did not led to the successful creation and implementation of innovative models of development but caused the probability of so-called «systematic break away» from developed countries due to the low innovative capacity, the growing incompatibility of technologies, as well as structural and institutional crisis discrepancy to the international norms. On the other hand, globalization leads to the specifics of innovative competition, turning it into an intense struggle for intellectual leadership, which determines the necessity of innovative model of economic development implementation.

Analysis of recent scientific research and publications. Fundamental contribution to the formation of theoretical concepts of innovation theory, which serves as the starting point for building the competitive advantage at the macro-, mid- and micro levels, was made by A. Smith, D. Ricardo, K. Marx, E. Bohm-Bawerk, J. Mill, and later by L. Walras, J. Keynes, A. Marshall, R. Solow, R. Foster, who formed the scientific basis of interaction between economic growth and scientific and technological progress. Significant scientific advances set apart the papers by A. Bewntandam, P. Gardner, M. Kondratyev,

C. K. Prahalad, R. Rothwell, B. Santo, A. Slyvotski, M. Stefik, B. Stefik, B. Twiss, R. Waterman, G. Hamel, and Ukrainian scientists V. Aleksandrova, L. Antoniuk, A. Halchynskiy, V. Geets, N. Goncharova, O. Lapko, L. Fedulova, A. Chukhno.

The purpose of the article is to develop a theoretical basis for adequate public economic policy to implement innovative models of economic development.

Analysis

Using of systemic methodology helped to reveal a logical link to the dynamic competitive environment and the variability of economic entities, which served as the basis for the establishment of a trend of formation of innovative individual and regularly identify the need to develop innovative type of their competitive behavior.

The consequence of these negative processes is the competitiveness reduction of the science and technology sphere as well as intellectual capacity outflow. The latter requires a radical revision of the innovation policy foundations, clarification of innovative development priorities, the formation of sources of financial support, and the establishment of effective innovation market in order to restructure the domestic economy as a mean of enhancing its competitiveness.

Using a systematic methodology revealed the logical dynamic competitive environment and variability of entities that serve as the basis for establishing the formation of innovative active individual trend and identification of the need to develop their innovative competitive behavior. This thesis is consistent with the concept of uncontested innovative development, based on the intellectualization of all the spheres of public life, innovation and global expansion. The development process creates a development vector that provides the intellectual leadership. It is characterized by the priority use of innovative technologies and transition to the production of high-tech products, progressive management decisions in the innovation activities related to micro- and macroeconomic factors of development. Aspiration to the innovative development model necessitates the establishment of national innovation system as an environment for creating innovative enterprises.

Considering the above-described situation, the authors have performed a comparative analysis of global competitiveness index of Ukraine and its determining factors. The results showed the absence of fundamental socio-economic transformation in the country, and demonstrated the formation of strategic gaps in the process of the innovation development model building and its implementation mechanism. Thus, over the period 2000–2015 Ukraine 's global competitiveness ranking ranged from 68 to 89 that demonstrates the inertness of the econ-

omy development and the inability to implement the strategic plans declared at the state level. Ukraine ranked 79th (out of 144 countries) in 2015 (The Global Competitiveness Report 2015–2016, 2015), (for comparison purposes: in 2008, Ukraine ranked 72nd (out of 134 countries) (The Global Competitiveness Report 2008–2009, 2008). Despite the lack of a positive trend in ensuring the competitiveness of the national economy, it is important to analyze to the decrease of the main components values of the abovementioned index in 2008-2015:

- «basic requirements subindex» rank 101 in 2015 (rank 86 in 2008);
- «efficiency enhancers subindex» rank 72 in 2015 (rank 58 in 2008);
- «innovation and sophistication factors subindex» rank 92 in 2015 (rank 66 in 2008).

The ratings of the following factors were the lowest index among 144 countries in 2015 (The Global Competitiveness Report 2015–2016, 2015):

- among the components of the «basic requirements subindex» traditionally, these were the factors of «Innovation» (rank 130, rank 115 in 2008); «Macroeconomic environment» (rank 134, rank 91 in 2008);
- among the components of «efficiency enhancers subindex» these were the following factors: «Goods market efficiency» (rank 106, rank 103 in 2008), «Labor market efficiency» (rank 56, rank 54 in 2008), «Financial market development» (rank 121, rank 85 in 2008), «Technological readiness» (rank 86, rank 65 in 2008);
- among the components of «innovation and sophistication factors subindex» these were the following factors: «Business sophistication» (rank 91, rank 80 in 2008), «Innovation» (rank 54, rank 52 in 2008).

The information shows a consistently low level of competitiveness over a long period of time, which confirms the weak performance of economic and organizational mechanisms of macro-, meso- and micro levels in the motivation of market entities to the development of new competitive enterprises on the basis of formation and implementation of innovation priorities and structural changes in the economy.

Among the factors of competitiveness, that cause the inhibition of the competitiveness increase of Ukraine, these authors note first of all, the ones that shown the most critical decrease. Thus, during 2008-2015 the rank of «Institutions» subindex dropped by 15 points, which is closely associated with the significant difficulties of doing business (rank 91 in the ranking with a corresponding decline in 2008- 2015 by 9 points). In such a situation, the decrease of goods marked seems to be logical (3 points), as well as labor market efficiency (by 2 points) and the degree of financial market development (by 36 points). The decrease of «Business sophistication» rank (by 11 points) and «Innovation» (by

2 points) is significant as well, which does not meet the latest challenges of the information society and the challenges of successful integration of the domestic economy to the global market. The sharp decrease of innovation rating requires, in these authors opinion, further analysis (table 1).

Table 1

**The rating of «Innovation» subindex components
in the global competitiveness index of Ukraine**

The components of «Innovation» subindex	Ranking, year 2008	Ranking, year 2015
1. Capacity for innovation	31	52
2. Quality of scientific research institutions	48	43
3. Company spending on R&D	52	54
4. University-industry collaboration in R&D	49	74
5. Gov't procurement of advanced tech products	54	98
6. Availability of scientists and engineers	54	29
7. PCT patents, applications/million pop.	65	50

Source: calculated by the authors based on data of the Global Competitiveness Report (2008) and the Global Competitiveness Report (2015).

The analysis of data provided in the Table 1 shows the falling ratings of almost all «Innovation» subindex components. This fact confirms the existence of strategic gaps in the innovation development and the lack of a system vision of the prospects to overcome them.

The international experts (The Global Competitiveness Report 2015–2016, 2015) believe that in 2015, the most problematic factors for doing business in Ukraine were Corruption, Policy instability, Access to financing, Government instability/coups, Inefficient government bureaucracy, Inflation, Tax rates, Tax regulations. Unfortunately, the competitive advantage of «Higher education and training» which was traditionally developed is interpreted as a potential threat nowadays («Competitiveness of Economy of Ukraine: Ukraine's place in the major world rankings», n. d.) which raises a whole layer of problems related to the development and preservation of human potential. In this context, the group of experts under the leadership of Academic Zgurovskiy (2015) made such a conclusion: «knowledge-intensive sector of the domestic economy is almost fully degraded. The demand on the labor market has shifted mainly to the representatives of the service sector, where scientific knowledge turned out to be unneces-

sary... the field of advanced education, science and innovation, particularly in the fundamentally-natural component, has started to «impede» the labor market. A primitive labor market began to deprive the youth and higher education incentives, which leads to uselessness of science-based knowledge syndrome and the displacement of the best human potential of the country» («Forsyth of Ukraine's economy: mid-term (2015–2020) and long term (2020–2030) time horizons (version for discussion)», 2015, p. 5) These negative effects require immediate response as Ukraine's rank in «Health and primary education» component of global competitiveness index in 2015 is 43, and the index of a society based on knowledge (k-society), holds the position of 40th (Zgurovskiyi, n. d.) that taking into account the above-mentioned «Innovation» components subindex does not contribute to the pessimistic situation. The analysis of these indexes' components demonstrates the essential proximity and partial overlap of k-society indices (the sub-indices are the indicators of the intellectual assets of the company, prospects of society development, the quality of the society development) and global competitiveness. This fact allows to assume the presence of certain pre-conditions for competitiveness increase of Ukraine on innovative basis (subject to implementation of innovative development models), given the actual values of k-society development index. However, the attention should be paid attention to the warning of I. Odotyuk: «the prolongation of the existing economic conditions regarding the acceleration of the innovation processes and the preservation of inefficient formal approaches to monitoring and evaluation of innovative structural changes in the economy will inevitably lead not only to the final exhaustion of the innovative potential, but also to the loss of an important creative resource of the reproduction process of the national economy» (Odotyuk, 2009, p. 64).

The index of gross domestic product (GDP) research intensity is a reliable indicator that shows the factual condition state and prospects of implementation of innovative development model of the economy. Analysis of successful companies and countries that are the world leaders according to a number of criteria shows that the implementation of an innovative development model is uncontested. The intellectual leadership can be achieved under the condition of increased funding for science and innovation. To identify the factual condition and prospects of high-tech production development these authors have analyzed the indicators of GDP knowledge-intensity in some developed countries and Ukraine (table 2).

The analysis of GDP knowledge-intensity predictive estimation intensity allows the authors to make a conclusion that in the great majority of the developed and developing countries, there is a clearly defined tendency of appropriations growth in science and innovation areas. On the other hand, a slight projected increase in the research intensity of GDP in Ukraine, in authors' view, will not ensure the elimination of innovation gaps and will not create the sufficient prerequisites for the implementation of the innovative development model.

Table 2

The dynamics of GDP knowledge-intensity of Ukraine, Russia, Belarus, China, and the countries that are technological leaders, OECD, EU, BRIC, 1995–2020, %

Country	1995	2000	2005.	2010	2020 *
OECD	2,1	2,2	2,3	2,4	2,6
USA	2,5	2,7	2,6	2,7	2,8
Japan	2,7	3,0	3,3	3,4	3,5
China	0,6	0,9	1,3	1,5	1,9
Russia	1,0	1,1	1,1	1,2	1,5
BRIC	0,7	0,9	1,0	1,1	1,4
Ukraine	1,2	1,0	1,0	0,9	1,3
Belarus	1,0	0,7	0,7	0,8	1,3

*Predictive estimation.

Source: compiled by the authors based on data of Odotyuk (2009, p. 65).

Threatening condition of innovative activity in Ukraine and the lack of real prerequisites for the strategic competitive advantages formation can be illustrated by the following figures: the number of industrial enterprises, that are engaged in innovative activity decreased from 18.0% in 2000 to 13.0% in 2008 and was 16.8% in 2013. According to State statistics service of Ukraine, during 2008–2013 period a number of innovative products at industrial enterprises grew by 28.3% but the number of products new for the market decreased by 23.8%, while the number of products having novelty only for a particular company, grew during this period by 55.5%. This confirms the trend of producing radical innovation processes collapse in the domestic economy. In addition, during 2008–2013 period the number of implemented new technological processes decreased by 4.3%, while low-waste, resource-saving and waste-free processes decreased by 26.2% (State Statistics Service of Ukraine, 2014a, p. 154). As the result, the total number of companies that produced high- tech products consist only 4.5%. The products with low added value and low level of technology consist almost 70% of the national exports to the European Union (EU), while the share of machinery, appliances, equipment is only 10% («In the world ranking Ukraine lags behind», 2011).

The reformation of the innovative-technological structure of production which determines the level of innovativeness of the economy is interrelated with the previous analysis. In this context, one should pay special attention to the theoretical standpoint by J. Schumpeter, that is fundamentally different from re-

search results of predecessors. Innovation, as a rule, do not develop from previous results, but can appear and do not be compatible with the existing structure. This contradiction must be addressed through appropriate structural changes (restructuring, according J. Schumpeter – creative destruction). Therefore, a prerequisite for economic growth, based on innovative behavior (innovative thinking, creativity, innovative culture) is a restructuring of the national economy (or enterprises), which determines new parameters of the development.

J. Schumpeter and his followers substantiated the methodological basis of economy conversion on the innovative principles that prompted the current actualization of economic transformation on the innovative basis and their development in the latest theories of economic growth. These theories are known as neo-Schumpeter, their principle idea is formed around the research of so-called technological dynamics. This particular direction of economic thought interprets technological change as an object which posses the features of dynamic evolution and determines the development direction of civilization. This process is wavelike and is described by the classic theory of the «long waves» developed by M. Kondratyev.

The latter determine the structural changes in the economy and the predetermined frequency change production and introduction of innovations. The industry-locomotives are created on this base. They are to spread the ideas of innovation in the economy. The IT technologies that are the base for the creation and development of a knowledge society were considered such locomotives. However, biotechnology becomes one of the promising sectors nowadays.

The change of the dominant technological setup is accompanied by drastic institutional transformation, and this process is known as the technological revolution, which has the following characteristics: an increase of innovative activity, a rapid increase of production efficiency, social and political recognition of new technological opportunities, the change of the price proportions in accordance with the properties of a new technological system (Dementyev, 2009, p. 22). During this technological revolution the depreciation of capital in the production of obsolete technological structure, reduction, deterioration of the economic situation, the deepening of the foreign trade contradictions, the worsening social and political tensions usually take place . On this basis, the substitution of the old technological structure requires changes in social and institutional systems to ensure rapid dissemination of new technological setup.

Considering the need to transform theoretical developments to applicable methodological recommendations, Organization for Economic Co-operation and Development (OECD) assesses the innovative and technological production according to technological intensity: high-technology industries; medium-high-technology industries; medium-low-technology industries; low-technology industries. Yu. M. Bazhal argued that this classification is consistent with classification according to technological structures, which are formed in during the «long

waves» by M. Kondratiev: high-technology industries correspond to the fifth technological setup, medium-high-technology industries – to the fourth technological setup, medium- low-technology industries and low-technology industries – to the third technological setup (Fedulova, Bazhal, & Osetskyiy, 2011, p. 216). The study of the international trade global trends confirms the increase of the high technologies for the manufacturing purposes. According to the «Techno-bridge» fund, the dynamics of international trade according to levels of technological intensity by OECD countries for the 1997–2007 period was characterized by the following data: 18% were the products manufactured by low-technology industries; 20% were the products manufactured by medium-low-technology industries; 39% were the products related to medium-high-technology industries; 23% were the products manufactured by high-technology industries. Unfortunately, Ukraine is not covered by the OECD research and Ukrainian statistics do not provide the above mentioned information, that is why Ukrainian scientists adapt the foreign methodology to Ukraine’s statistical base and conduct comparative analysis of production and technological structure to develop management alternatives in terms of technoglobalism intensification. These authors used the Classification of manufacturing industries based on technology, developed by the OECD (2003) as well as the national statistical base (State Statistics Service of Ukraine, 2014b] to form four abovementioned groups of sectors with maximum approximation of Ukrainian statistical sampling to the OECD classification to identify the level of innovation (or adaptability) of the Ukrainian exports (table 3). Export performance, in the authors’ view, provides a solid base for the research of innovative technologies and production manufactured on its basis.

Table 3

The structure of Ukraine’s exports of goods in terms of innovative technologies

Groups of products according to technological intensity	Exports of goods					
	2004		2008		2013	
	U. S. dollars, mln.	%	U. S. dollars, mln.	%	U. S. dollars, mln.	%
1. High-technology industries	788,8	2,4	616,8	0,9	858,1	1,4
2. Medium-high-technology industries	8243,5	25,1	15574,7	23,3	14375,9	22,8
3. Medium-low-technology industries	18092,5	55,0	36239,5	54,2	26554,7	42,1
4. Low-technology industries	5762,7	17,5	14474,3	21,6	21249,5	33,7
Total	32887,5	100,0	66905,3	100,0	63038,2	100,0

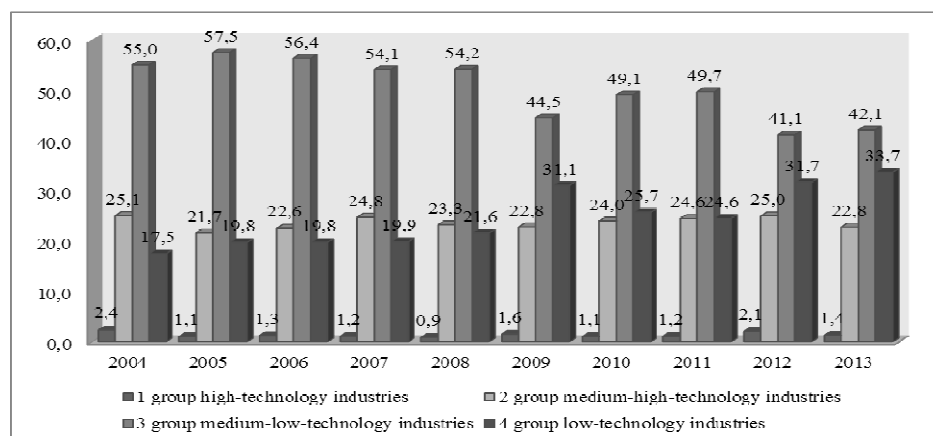
Source: calculated by the authors based on data of OECD and State Statistics Service of Ukraine (2014b).

The analysis of the data presented in Table 2 reveals a well-defined upward trend of low-technology and medium-low-technology industries from 72.5% (17.5% + 55.0%) in 2004 to 75,8% (33.7% + 42.1%) in 2013. These technologies include third, the lowest technological setup. This trend is especially threatening during 2004–2013 in the structure of commodity export low-technology industries share (from 17.5% to 33.7%) and the fall of high-technology industries share-technology (from 2.4 to 1.4%), which characterizes the decline of innovative domestic technologies. The results of these studies are quite conventional, despite a divergence of domestic and international approaches but their use still gives an opportunity to get an idea of Ukraine's economy innovativeness level.

The detailed information on the structure Ukraine's exports of goods during 2004–2013 is presented in Figure 1.

Figure 1

Dynamics of Ukraine's exports of goods during 2004–2013 in terms of innovative technologies



Source: calculated by the authors based on data of OECD and State Statistics Service of Ukraine (2014b)

Acknowledgement with the information presented in Figure 1 leads to the conclusion that Ukraine's export potential is mainly based on lower technological setups, has no effective institutional tools for the radical restructuring and cannot be competitive in the global market nowadays.

The level of innovation development of the country can be also measured using the quantity and dynamics of the first three largest export product groups (Bazhal, n. d). Using this approach, these authors analyzed the export specialization of the Ukrainian economy, the economies of the countries that had similar initial development conditions (Poland and Russia) in the 90th of the XX century, and Germany as a highly developed country (Figures 2, 3, 4, 5).

Comparative analysis of the top-3 product groups selected for this study demonstrates a low-tech specialization of Ukraine's economy with a clearly defined metallurgy priority (Figure 2), which significantly prevails over other product groups in cost parameters, but tends to exports reduction. Unfortunately, Ukraine implements a long term export development strategy focused on raw materials. Poland's economy demonstrates a strong growth of economy innovation which is evident from the indices dynamics and export structure analysis (Figure 3). The level of economy innovation of Russian economy is low, as the country exports mainly oil and petroleum products, natural gas, iron and steel (Figure 4). It is significant that during last decades Ukrainian officials and experts considered its economic policies as an example for the domestic economy. The structure of German exports (Figure 5) is provided as an example of effective innovation policy.

Figure 2

The parameters of the TOP-3 export product groups of Ukraine,
U.S. dollars, mln.

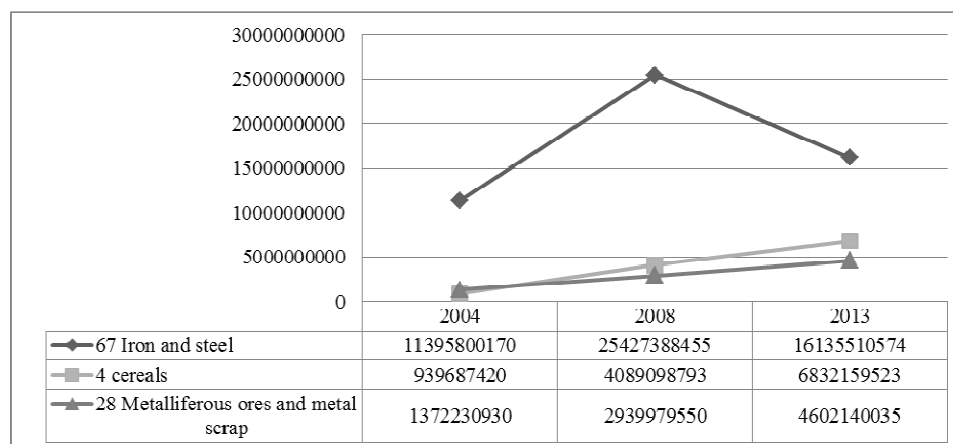


Figure 3

The parameters of the TOP-3 export product groups of Poland, U.S. dollars, mln.

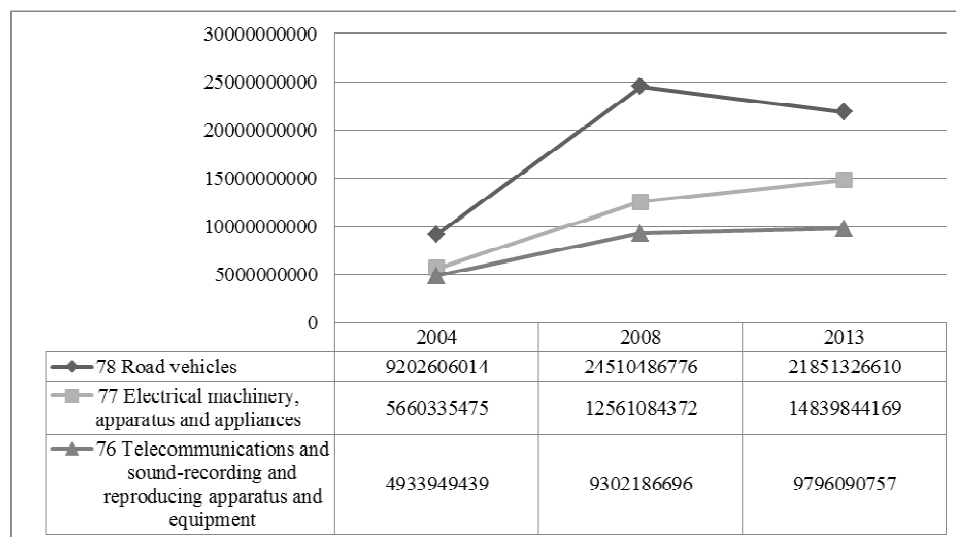


Figure 4

The parameters of the TOP-3 export product groups of Russia, U.S. dollars, mln.

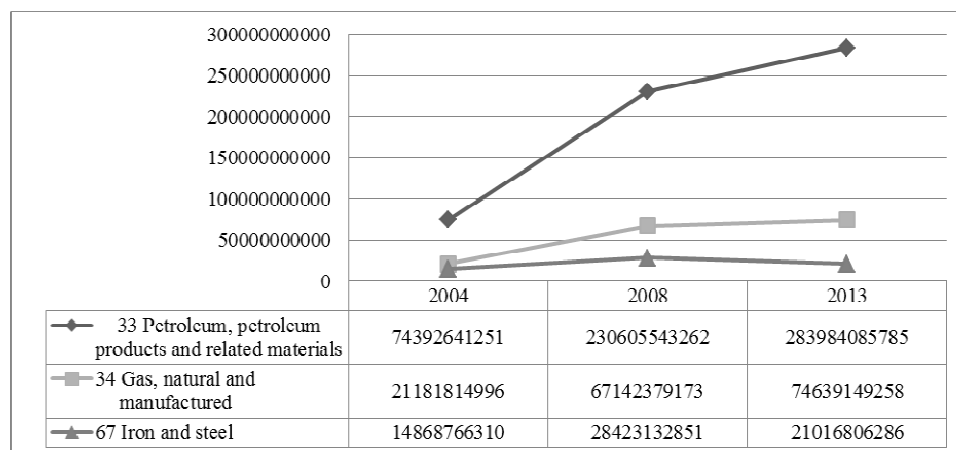
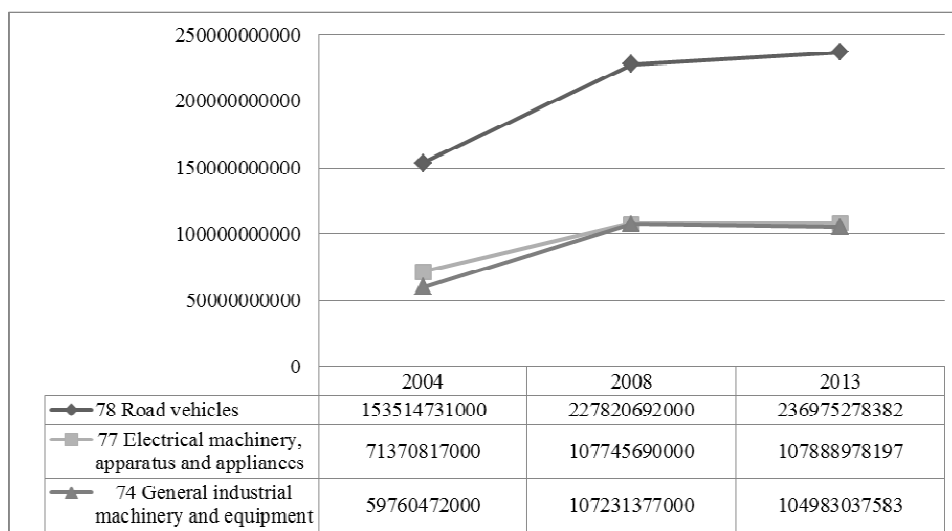


Figure 5

The parameters of the TOP-3 export product groups of Germany,
U.S. dollars, mln.



Summing up, the analysis of institutional mechanisms designed to ensure the transition of the national economy on an innovative development model and conceptualization of diverse and fragmented empirical studies in this area have revealed the following barriers for the innovation process in Ukraine:

1. Unsystematic processes of innovation activity and lack of sustainable development trends against the backdrop of global expansion innovation.
2. The lack of correlation between traditional (price) competitive advantages of domestic entities and innovation base formation benefits.
3. The non-equivalence and inequality of Ukraine's participation in international migration innovations.
4. Low international competitive level of domestic developments in Ukraine that are identified as innovations.
5. Contradictory attitude to small businesses as a source of innovation.
6. Innovation infrastructure fragmentariness.

This research has shown that the presence of the certain prerequisites of innovative development model is in conflict with the technological structure of production, which becomes a hindrance to promising reforms in the national economy. The lack of the clear strategic innovative development priorities, and the organizational mechanisms for their implementation determines the inertia of the innovation process. These authors can explain the direction of the predominant financial allocations in research and development of the fourth technological setup, and the investments – in the technical re-equipment and modernization of the third technological setup sectors. Therefore, innovative and investment priorities, which has actually been formed in Ukraine during recent decades, are inconsistent with global trends of innovative development. The above contradictions of the innovation process pose a number of problems that must be to solved systematically.

Summing up, these authors would like to note that the level and pace of national innovation system development cannot ensure sustainable development of the economy.

In the «The strategy of innovative development of Ukraine for 2010–2020 in the conditions of globalization challenges» (which was not enacted by Verkhovna Rada of Ukraine), it is noted that the innovation processes in the economy were not developed to any significant extent, the innovation level is extremely low, and the number of enterprise that introduce innovations decreases year by year and is 2–3 times less than the same indicator for the developed economies. The knowledge intensity of the industrial production is 0.3%, and it is far below the average world level. At the same time almost a third of the funds spent on innovation accounts for the purchase of the equipment, while the acquisition of new intellectual property rights or research and development (R&D) costs are significantly less. Almost a half of the innovative enterprises generally do not fund the research for their own production. According to the European innovation scoreboard classification Ukraine is in the last, the fourth group of the «modest innovators» with the index value of 0.34. Among the «innovation leaders» is Switzerland (0.79), the «innovational followers» is Ireland – 0,48, the «moderate innovators» is Norway – 0,46, that are far ahead Ukraine («European Innovation Scoreboard», n. d.).

Conclusion

So, the current state of innovation which should ensure the transformations in the national economy does not correspond to modern requirements of society intellectualization and globalization of innovation. The fragmentation of the innovation process and the existence of «innovation gaps», the possibility of a weak absorption and assimilation of innovation, as well as a number of other

objective and subjective circumstances are the result of the institutional changes misalignment that provide market transformations in Ukraine.

Given these circumstances, the following question is appropriate: does the Ukrainian society have the potential for rapid growth, achievement the high level of competitiveness on the basis of a set of innovative development priorities?

A paradigm shift in the global development and the formation of a new world order and the consequent necessity of intensive formation of innovative development model as a basis for competitiveness increase of the country, reveals a number of urgent problems to bridge gaps in the innovation process economic science:

- choice of high-tech industries for priority investment. However, while analyzing the prospects for Ukraine's inclusion to the implementation of global initiatives, A. Shnytko noted «...the Conglomerate of global initiatives is a threat to Ukraine's involvement in the new global high-spending competition with developed countries («the Golden billion») with the predictable negative result (according to the example of the USSR – the U. S. «star wars» example). On this basis, there should be a kind of «separation» from global initiatives, to clearly define where Ukraine can achieve synergy by combining these initiatives on a national scale» (Shnytko, 2007, p. 119). Despite the rational aspects of this statement, a further exploration of the existing scientific and innovative potential of the state should be performed to assess the possibilities, to concentrate on well-grounded innovation priorities and to predict the expected result in relation to the possibilities of solving other urgent problems;
- revision of the state innovation development mechanisms regulation, since the activities of executive power in Ukraine is inconsistent, and the priority directions of scientific-technical and innovation activities are driven by separate institutions (e. g. the Ministry of education and science of Ukraine, State Agency of Ukraine for investments and development). However, without funding, which is distributed by the Ministry of Finance of Ukraine, they cannot implement the declared programmes and projects. In this context, it is necessary to specify the status of the state innovation programs and identify the mechanisms of scientific organizations and higher education institutions cooperation with the manufacturing sector in the field of innovation;
- considering the share minor share (in comparison with the developed countries), of small and medium business in the overall GDP, it is necessary to develop a mechanism of motivation and stimulation of small innovative enterprises development, as they are able to generate innovative ideas and entrepreneurial suggestions. In order to do this it is necessary to develop an incentives system for technological innova-

tion; to build a mechanism to use the potential of small and medium enterprises to fulfill state orders for scientific and research tasks; to implement the mechanisms to set up the creative networks and organizations that are engaged in self-study; to introduce the mechanisms of scientific and technological and R&D achievements commercialization; to form the Internet that contains information on the innovative potential of the small and medium-sized enterprises to meet the needs for special studies; to increase the demand for innovation and scientific-technical developments;

- development and approval of the mechanism that enables an effective interaction of the state bodies that provide the support and ensure the development of innovation sphere in Ukraine; to define clearly the distribution of power between state institutions, public executive bodies and the executive bodies of the regional level, investment and venture capital funds, foreign funds and innovation networks, transnational corporations etc. The relationship building between the elements of the innovation system within the country to eliminate «innovation gaps» is a reasonable initiative. Also, it is important to develop a mechanism to enable the inclusion of the National innovation system of Ukraine to the global innovation process. Under the condition of total lack of funds to implement the innovative projects, the implementation of the principles of public-private partnerships is an important prerequisite;
- development of international cooperation in the innovation sphere, including boosting regional cooperation processes. Euroregions that are able to integrate the positive trends of the «new competition», «new regionalization» and new knowledge-based economy can become an effective tool.

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