THE CHALLENGES OF GLOBAL COMPETITIVENESS: THE INSTITUTIONS AND INNOVATION DEVELOPMENT

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Abstract: *The paper is devoted to the analysis of the causes of decreasing Ukraine's global competitiveness position, and the influence of the factors: "Higher education and training", "Innovation", "Institutions" on the global competitiveness of Ukrainian economy. The possibilities of increasing the global competitive position of Ukraine by intensification of innovative activity, development of the set of measures on strengthening the innovative components of global competitiveness have been examined. A set of measures for creating an institutional mechanism of the innovative environment development has been suggested.*

Keywords*: global competitiveness, World Economic Forum, Global Competitiveness Index, factors of competitiveness, innovation.*

JEL Classification: O_{31}, O_{43}, O_{57}.

1. Introduction

Since the second half of the XX-th century the scientific, technical and technological progress has been the determinant factor of development of both national economies and global economic system on the whole. At the present time such kind of influence is presented by the concept of the knowledge economy, which was formed in the process of world economic development on the border between the XX-th and the XXI-st centuries. The inability to carry out structural reforms according to the requirements of new technological paradigm not only brakes the steady development of the national economy, but also results in its economic degradation. At the same time, the intensification of innovative activity, development of the national innovative system and institutional system, are the pre-conditions of increasing the country's global competitiveness.

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A global competitiveness becomes a key parameter which determines the role of each national economy in the modern World. This parameter can not be examined as the economic one. The World Economic Forum's experts define competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turns, sets the sustainable level of prosperity that can be earned by an economy.

In the long run, standards of living can be expanded only with innovation. Innovation is particularly important for economies as they integrate the new knowledge into production process for creating modern technologies to maintain the firms' and the nations' competitive edge. This requires an institutional environment that is conductive to innovative activity, supported by both the public and the private sector. The importance of a solid institutional environment becomes even more apparent during the after-crisis economic recovery has an innovative nature. Innovation is not possible without institutions that guarantee intellectual property rights, cannot be performed in countries with a poorly educated and poorly trained labour force. So innovation and institutions not only are they related to each other, but also they tend to reinforce each other. A necessity of profound research influenced by institutional transformation on innovative potential, which is the important factor of a country's competitiveness, arises under globalization.

By data of the World economic forum (WEF), Ukraine substantially increased its global competitiveness position at the ranking from the factor "Innovation" in 2009. Further development of mechanisms of transformation of potential competitive advantages into the real ones became an important goal.

Present research is aimed to determine the possibilities of increasing the global competitive position of Ukraine by intensifying an innovative activity, developing a set of measures on strengthening the innovative component parts of global competitiveness, forming the institutional mechanism of development of innovative environment.

2. Factors of global competitiveness: the analysis for Ukraine

The potential of global competitiveness is determined by the difficult combination of political, economic, social and cultural factors, the most important place among which belongs to innovative potential of society.

The actual method of construction of the Global Competitiveness Index (GCI) involves the aggregation of twelve key factors (pillars) which are important for increasing the productivity and for providing sustainable development, into a single index. Ukraine ranked 82 from 133 countries in GCI – 2009 ranking. It moved down since previous years (place 78 in 2006, place 72 in 2008). The data shown in Table 1 illustrates the shifts in Ukraine's rank in the factors of global competitiveness rankings in 2006 and 2009.

Table 1.

Ukraine's ranks in the factors of global competitiveness rankings, 2006, 2009

GCI / Factors of global competitiveness	**Ranks**	
	2009	**2006**
GCI	82	78
Basic requirements	94	86
Institutions	120	104
Infrastructure	78	69
Macroeconomic stability	106	74
Health and primary education	68	94
Efficiency enhancers	68	69
Higher education and training	46	48
Goods market efficiency*	109	-
Labour market efficiency*	49	-
Financial market sophistication*	106	-
Technological readiness	80	90
Market size*	29	-
Innovation and sophistication factors	80	78
Business sophistication	91	76
Innovation	62	73

Source: Global Competitiveness Report 2009-2010, World Economic Forum, Geneva. 2009, p. 315, Global Competitiveness Report 2006-2007, World Economic Forum, Geneva. 2009.

*Calculated until 2009.

Although Ukraine demonstrates a decline in performance, decreasing the general competition position (GCI rank), it increased in some indicators.

Indeed, Ukraine moved up 12 places to 62 in the rank on the factor „Innovation", 10 places to 80 in the rank on the factor "Technological readiness", 2 places to 46 on the factor "Higher education and training". It is evidence of potential competitive advantages in an educational, technological, innovative area. The necessity of developing the mechanism of transformation of potential competitive advantages for the real ones follows from here. That will create the pre-conditions for transition of Ukraine to the innovative model of development, and will provide the higher place at the Global Competitiveness Index ranking.

At the same time Ukraine occupies place 120 in the ranking on factor "Institutes" and moved down 16 ranks after 2006. The same result Ukraine demonstrates in "Business sophistication" factor which is included by WEF experts to the group of "Innovation and sophistication factors", by moving down from place 76 to 91.

The global competitiveness position of Ukraine consistently runs down at the following chain of factors of global competitiveness: beginning from the rather strong position at "Higher education and training" (46 rank) to lower position in "Innovation" (62 rank), "Technological readiness" (80 rank) and "Business sophistication" (91 rank). At the very end of the chain is the factor "Institutions" (120 rank) which we consider as a most important cause of not sufficient innovative and business environment as well as low global competitiveness of Ukraine.

The WEF experts combine the countries into three groups according to GCI factors which are the key determinants of development. Basic requirements are the key for factor-driven economies, efficiency enhancers form the background for efficiency-driven economies, and innovation and sophistication factors determine the development for innovation-driven economies. Thereafter five stages of development are established: stage 1 – factor driven; transition from 1 to 2; stage 2 – efficiency driven; transition from 2 to 3; stage 3 – innovation driven.

On WEF classification Ukraine is allocated to efficiency-driven stage of development, while the most of countries that have a high GCI rank are allocated to the innovative stage.

We compare the GCI factors scores for Ukraine with the GCI factors average scores for five groups of countries at stages of development mentioned above (Table 2).

Table 2.

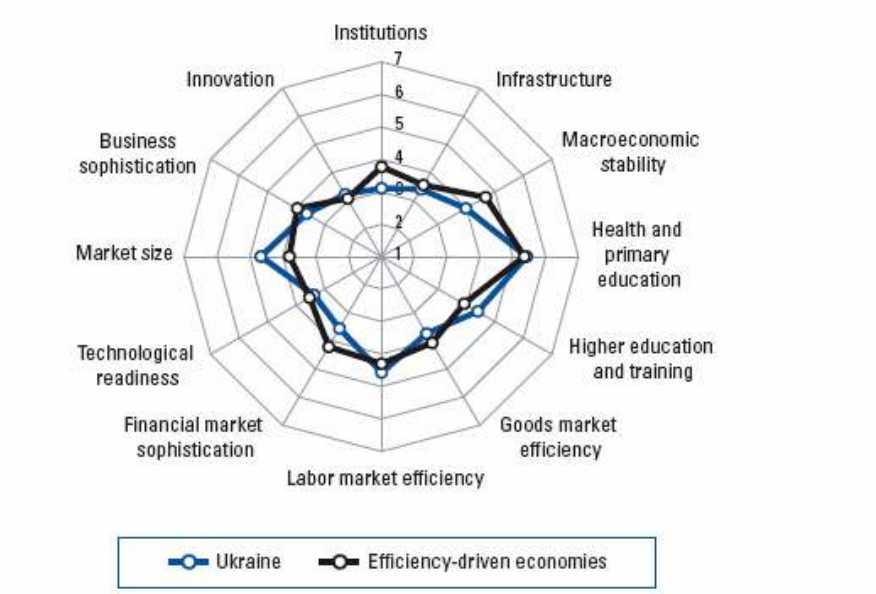
The GCI factors scores for Ukraine, 2009

Factors of global competitiveness	**Ukraine**	**Stage 1**	**Transition from 1 to 2**	**Stage 2**	**Transition from 2 to 3**	**Stage 3**
Institutions	3,1	3,5	4,1	3,9	4,1	5,0
Infrastructure	3,4	2,9	3,9	3,6	4,2	5,3
Macroeconomic stability	4,0	4,0	5,0	4,7	5,0	5,0
Health and primary education	5,4	4,2	5,3	5,3	5,7	6,0
Higher education and training	4,4	3,2	3,9	4,0	4,5	5,2
Goods market efficiency	3,7	3,8	4,1	4,0	4,5	5,0
Labour market efficiency	4,6	4,1	4,2	4,3	4,4	4,9
Financial market sophistication	3,6	3,8	4,0	4,2	4,3	5,0
Technological readiness	3,4	2,9	3,5	3,5	4,0	5,2
Market size	4,7	3,0	4,0	3,9	4,0	4,7
Business sophistication	3,6	3,7	4,0	4,0	4,0	5,0
Innovation	3,2	3,0	3,1	3,1	3,3	4,4

Source: Global Competitiveness Report 2009-2010, World Economic Forum, Geneva, 2009, p. 16-20.

Examination of comparative analysis results for factors “Institutes”, “Higher education and training”, “Technological readiness”, “Business sophistication”, and “Innovation” demonstrates that Ukraine stands behind all the groups, including Stage 1, on factors “Institutions” and “Business sophistication”, and excluding Stage 1 on factor “Technological readiness”.

A comparison of the basic factors of global competitiveness scores for Ukraine and for efficiency-driven economies is shown at a Figure 1.



Source: Global Competitiveness Report 2009-2010, World Economic Forum, Geneva, 2009, p. 315

Fig. 1. Comparison of factors of GCI for Ukraine and efficiency-driven economies, 2009

Being compared with average level of efficiency-driven economies, Ukraine takes a good position on factors "Higher education and training" and "Innovation", leaving behind the efficiency-driven economies. Also, Ukraine takes an unfavourable position in "Institutions", "Business sophistication", "Technological readiness" factors.

We conducted the detailed analysis of GCI structure for 23 post-socialist countries of Central and Eastern Europe and former USSR included into GCI ranking (Table 3).

The obtained result shows the best achievement for Ukraine is rank 8 in "Higher education and training". Ukraine takes place 12 among 23 post-socialist countries in "Innovations", place 15 in "Business sophistication", place 18 in "Technological readiness". The worst result is rank 21 in "Institutions". It is worse that position of Tadjikistan (81 rank) allocated into factors – driven group, Azerbaijan (55 rank), Georgia (72 rank), Kazakhstan (86 rank) allocated to the group of transition from 1 to 2 Stage.

3. Institutional mechanisms of development the innovative system

Ability of society to provide the innovative development is determined not only by the level of education and science, but also by the ability of the institutional system to provide commercialization of research results, create the favourable „innovative climate", to adapt new knowledge to the requirements of business and society.

The inspection of enterprises from five regions of Ukraine such as city Kiev, AR of Crimea, Donetsk oblast, Kharkov oblast, Chernovitska oblast, on international methodology of CIS (Ukrstat, 2009) exposed the most important factors to be an obstacle to the innovation:

- limited financial resources into organization;
- high innovative costs;
- a long time existed organizations prevail at the market;
- insufficient government financing;
- it is difficult to find partners on a collaboration;
- insufficiency of financing from outsourcings;
- a necessity is absent, because there is not demand on an innovation;
- exact information is absent about demand for innovative goods;
- shortage of skilled personnel;
- shortage of information about technologies;
- shortage of information about markets;
- a necessity is absent, because innovations were recently inculcated.

The most substantial factor which brakes innovative activity, is the adoption of financial and markets obstacles. Between 27,5% enterprises in Kiev and 44,5% enterprises in AR Crimea reported about insufficiency of the personal funds; between 15% enterprises in Donetsk oblast and 24% in Kiev drawn attention to occupation of market by competitors. The insufficient government financing was mentioned by 19,4% enterprises in AR Crimea, 18,9% enterprises in Chernovitska oblast, 16,1% enterprises in Kiev. Insufficiency of financing from outsourcings caused as an obstacle for innovation was mentioned by 16,3% enterprises in Crimea, 13,1% in Kiev and 12,2% enterprises in Chernovitska oblast. Between 11% enterprises in Donetsk oblast and 16% enterprises in AR Crimea reported about the problems with the search of partners for cooperation. From 6,6% enterprises in Crimea to 10,6% enterprises in Kiev drawn attention on insufficiency of information about demand for innovative goods (services). From 4 to 6% enterprises reported about shortage of information about technologies, from 3 to 5% enterprises told about shortage of information about markets.

Table 3

The GCI structure for the post-socialist countries of Central and Eastern Europe and former USSR, 2009

Stage/Country	Institutions		Higher education and training		Technological readiness		Business sophistication		Innovation	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Stage 1										
Kyrgyz Republic	124	2,98	87	3,64	124	2,50	127	3,21	128	2,40
Tadjikistan	81	3,71	107	3,21	121	2,57	122	3,25	97	2,87
Transition from 1 to 2										
Azerbaijan	55	4,15	72	3,88	75	3,41	74	3,90	42	3,54
Georgia	72	3,82	84	3,70	100	2,92	113	3,33	119	2,56
Kazakhstan	86	3,64	59	4,13	69	3,53	88	3,70	64	3,15
Stage 2										
Armenia	95	3,49	96	3,45	105	2,86	112	3,35	108	2,71
Bosnia and Herzegovina	128	2,89	86	3,68	95	3,00	117	3,29	131	2,32
Bulgaria	116	3,19	60	4,11	56	3,82	89	3,68	91	2,90
Macedonia, FYR	83	3,69	70	3,90	52	3,87	96	3,56	92	2,89
Montenegro			57	4,19	45	4,15	80	3,82	56	3,29
Serbia	110	3,24	76	3,83	78	3,38	102	3,45	80	2,98
Ukraine	120	3,10	46	4,38	80	3,37	91	3,63	62	3,21
Transition from 2 to 3										
Croatia	85	3,65	56	4,20	43	4,22	84	3,76	61	3,22
Hungary	76	3,77	35	4,63	40	4,44	76	3,89	45	3,45
Latvia	65	3,91	34	4,66	47	4,00	82	3,79	88	2,94
Lithuania	59	4,00	30	4,76	36	4,54	56	4,22	58	3,28
Poland	66	3,90	27	4,82	48	3,97	44	4,35	52	3,33
Romania	84	3,68	52	4,30	58	3,97	83	3,79	70	3,10
Russian Federation	114	3,23	51	4,30	74	3,45	95	3,59	51	3,35
Stage 3										
Czech Republic	62	3,93	24	5,05	30	4,75	25	4,80	25	4,01
Estonia	31	4,85	21	5,11	16	5,49	48	4,31	37	3,64
Slovenia	46	4,47	19	5,16	32	4,67	33	4,64	29	3,83
Slovak Republic	78	3,74	47	4,37	33	4,61	51	4,29	68	3,12

Source: Global Competitiveness Report 2009-2010, World Economic Forum, Geneva, 2009, p. 16-20.

Substantially decreasing the negative influencing of the adopted factors is possible by creation of the proper institutional mechanisms.

Being based on generalization of experience of institutional transformations and on the possibilities of its adaptation to the Ukrainian modern reality (Сухарев, 2007), we propose a set of measures for creation the institutional mechanism of development the innovative environment:

- creation of Expert Council in development of institutional basis of the innovative system at Committee on Science and Education of Verkhovna Rada of Ukraine;
- effective legal providing and stimulation of development of the national innovative system;
- reformation of ownership relations for innovative sphere players;
- bringing the institutional investors into the innovative activity;
- forming the financial institutes of innovative development;
- forming the information providing system;
- forming the regional innovative activity providing systems;
- institutional providing of the system „education - science - production".

The questions of governmental stimulation of innovative activity need additional study, specification and resolving at the nearest future. On the basis of generalization of progressive forms and methods, widely used in the developed countries (Atkinson, R., 2003), measures must primary become:

- direct sponsorship of innovative processes, which consists in the direct financing of perspective research and innovative projects with budgetary funds;
- grant of interest-free or favourable loans;
- government order on the separate types of innovative products;
- state payments and grants to leading scientific institutes and researches;
- development of the system of deductions of taxes for innovative enterprises, introduction of the system of the tax crediting.

Introduction of measures on stimulation and development of innovative activity must be oriented on:

- development and saving of competitive edges in areas, where they are already created: aircraft construction, rocket production, metallurgical, chemical industry;
- development of the innovative sectors: aviation and space industry, shipbuilding, software development, bio- technologies, nano-technologies etc;

- development of progressive export-oriented sectors and modernization the traditional export-oriented industries.

4. Conclusion

A global competitiveness is a parameter which can not be examined as the economic one. Competitiveness may be defined as a set of institutions, policies and factors that determine the level of productivity of economy and prosperity of a country. In the long run, competitiveness can be maintained only with innovation.

The global competitiveness of Ukraine consistently decreases beginning from the rather strong position at the factor "Higher education and training" (rank 46) to lower position in factors "Innovation" (rank 62), "Technological readiness" (rank 80) and "Business sophistication" (rank 91). By the factor "Institutions" Ukraine demonstrates the worst result by taking rank 120 among 133 countries analyzed by WEF, and rank 21 among 23 post-socialist countries of Central and Eastern Europe and former USSR. We consider it is a most important cause of not sufficient innovative and business environment as well as low global competitiveness of Ukraine.

Substantially improving the innovative environment and creating a solid innovative system is possible by creating proper institutional mechanisms. The set of measures aimed at forming institutional mechanism of development of the innovative sphere consists of both public and private instruments.

The measures on stimulation and development of the innovative activity must be oriented on developing and saving the competitive edges in areas where they are already created, as well as on the development of the innovative sectors and the export-oriented industries.

References

1. Atkinson, R. D., (2003), *The Innovation Economy. A New Vision for Economoc Growth in the 21 st Century*, Policy Report, October 2003/ http://www.ppionline.org/documents/
2. Сухарев, О.С., (2007), *Институциональная теория и экономическая политика: К новой теории передаточного механизма в макроэкономике*, Кн. II / О.С. Сухарев, ЗАО Издательство Экономика, Москва
3. Global Competitiveness Report 2009-2010, World Economic Forum, Geneva, 2009
4. Global Competitiveness Report 2006-2007, World Economic Forum, Geneva, 2006
5. http://www.ukrstat.gov.ua/