

**ІНФОРМАЦІЯ ОБ АВТОРАХ**

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## **INNOVATION ACTIVITY IN UKRAINE: STATE, PROBLEMS AND LEGAL FRAMEWORK IMPROVING PERSPECTIVES**

**Abstract.** *Ukraine has rich natural resources and is a leading global manufacturer of number of agricultural and industrial goods. However, the innovation level of companies and their production of goods with high added value is low. Article provides view Ministry of Education and Science of Ukraine initiatives of necessary changes in the regulatory and institutional field that regulates innovation.*

**Keywords:** *innovation, legislation, index, competitiveness.*

### **INTRODUCTION**

For centuries, the rich natural resources meant stability and prosperity for the state. However, in the XX–XXI centuries, this pattern is not apparent. For example, Japan has small reserves of iron, coal, petroleum, Sweden, France and Switzerland have not these fuels or don't have them enough; UK has to import bauxite, nonferrous metal ores, Germany — iron ore, natural gas and oil; natural resources in Singapore are almost absent, but all these countries take place in the top twenty of the Global Competitiveness Index (GCI), which is the calculated by World Economic Forum. According to GCI. Countries, the main part of whose GDP is formed by export of raw materials, take place in the third or fourth top ten, while ranks in the first and second dozen are occupied by countries — exporters of high-tech equipment and new technologies.

### **PROBLEM**

Since 2000 Ukrainian rank in GCI are near 80. Despite the large number of regulatory acts, programs in the innovations sphere and government focusing on innovation as a priority of the state, the level of the economy deteriorates.

**The aim of the article** is to analyze some world indexes to understand Ukrainian gaps and possibilities of their improvement. In the article are depicted some steps that could simultaneously improve different economical spheres.

### **MAIN TEXT**

Ukraine is the largest country entirely in Europe and it's population is on the 6th rank in Europe after Germany, France, Italy, Great Britain and Spain.

Ukraine is famous for it's fertile ground and remains one of the world's largest grain exporters. Also Ukraine's economy includes a large heavy industry sector, particularly in aerospace and industrial equipment. Below you can see some ranks of Ukrainian export and producing: 1 — sunflower oil export, explored reserves manganese ore (11% of world reserves); 3 — crops export, honey export; 5 — eggs export; 9 — weapon's export; 11 — steel producing; 5 people-global ranking of billionaires by Forbes [1–3].

But, despite these, gross domestic product (at purchasing power parity) per capita (in US dollar) was 6 763 in 2015. That is very low indicator in comparison with Qatar (141 542, the biggest

Table 1

## Position in different Indexes

Index	Previous ranking	Current ranking	Dynamics	Below Ukraine	Above Ukraine
DOING BUSINESS	87	83	+	Brunei-Darussalam	Saudi Arabia
INTERNATIONAL BUSINESS COMPASS	109	89	+	Maldives	Philippines
GLOBAL SERVICES LOCATION INDEX	41	24	+	Great Britain	Germany
GLOBAL INNOVATION INDEX	64	56	+	Bahrein	Mongolia
GLOBAL COMPETITIVENESS INDEX	79	85	-	Tajikistan	Guatemala
LEGATUM PROSPERITY INDEX	70	107	-	Zambia	Senegal
BLOOMBERG INNOVATION INDEX	41	42	-	Serbia	Croatia

in the world), EU average — 37 864, world wide middle — 15 546 and is much closer to the group of countries that are fragile and conflict affected — 4 008. The smallest is — Central African Republic with 618 USD [4].

In the **Table 1** are depicted Ukraine's position in different Indexes, neighbors from downwards and upwards and dynamic from the previous year [5–11].

Improvement of position in DOING BUSINESS is connected with simplification of the regulatory norms and cancellation of a number of licenses and permits. Time to register enterprise was reduced also as was canceled the fee for state registration of business. Probably, the same reasons are of rising in INTERNATIONAL BUSINESS COMPASS (investment attractiveness). In it Ukraine enters the list of countries which have shown the best growth for the year, on a par with Belarus and Latvia. The next one is obvious. Ukraine is one of the leaders in IT outsourcing.

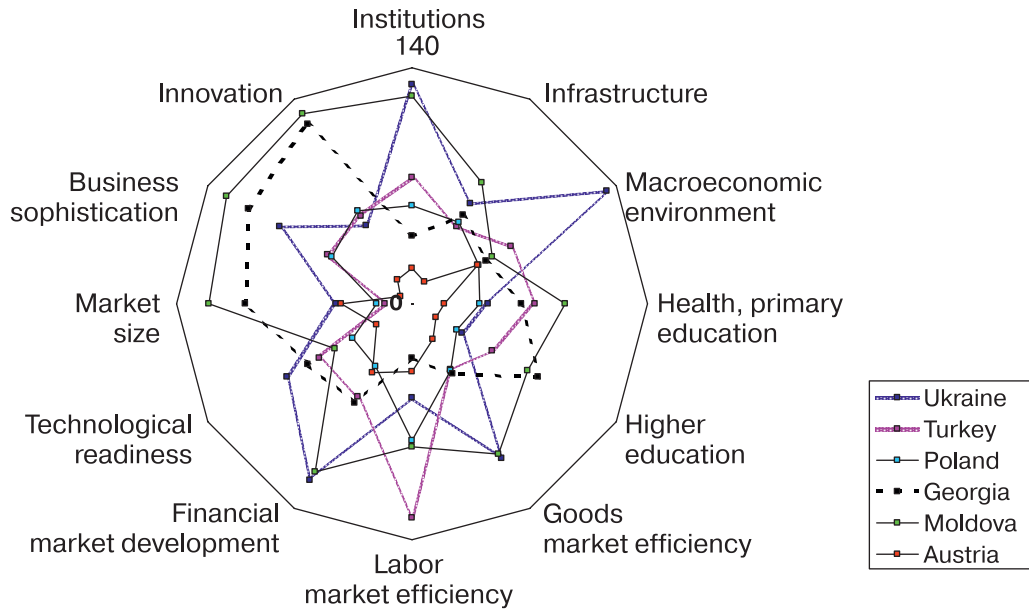
The PROSPERITY INDEX shows big gap in governance, security and social pillars. Growth of GLOBAL INNOVATION INDEX is connected with huge growth in educational sphere. Falling of GLOBAL COMPETITIVENESS INDEX is connected with worsened positions on such criteria: the macroeconomic environment; financial market development. In GIC Ukraine still occupies the top position in terms of market capacity, higher and secondary education, health care, primary education. In the

group “not-used possibilities” (those indicators whose change can provide rapid improvement of general country's index) are pillars of Technological readiness, Innovation and Labor Efficiency.

To compare Ukraine with similar countries were chosen Austria (as highly developed state), Poland and Turkey (as countries that are young in EU or for many years tried to enter EU), Moldova and Georgia (as former soviet republics, countries with transition economy, that try to make reforms and become a part of EU) (**Fig. 1**).

The only indicator in which Austria loses to other countries and is on par with Ukraine is the Market size. This is understandable as the country of 8 million people cannot compete in the 40 or 70 million. Countries of the high-middle level — Poland and Turkey — have similar diagram. In addition, Georgia is ahead of Ukraine on a number of parameters that are the result of the reforms. Ukraine lags on 4 parameters — Macroeconomic environment, Goods market efficiency, Financial market development and Institutions. To improve three of them (except Institutions) is possible with increasing of innovation activity.

For example, the state of Goods market efficiency could be improved through introducing systematic forecasting, analytical and strategic market research on scientific, technological and innovation development to choose the most competitive economic sectors and to provide the most part of state financing to them. This will provide



**Fig. 1.** Global Competitiveness Index 2015–2016 Pillars for some countries

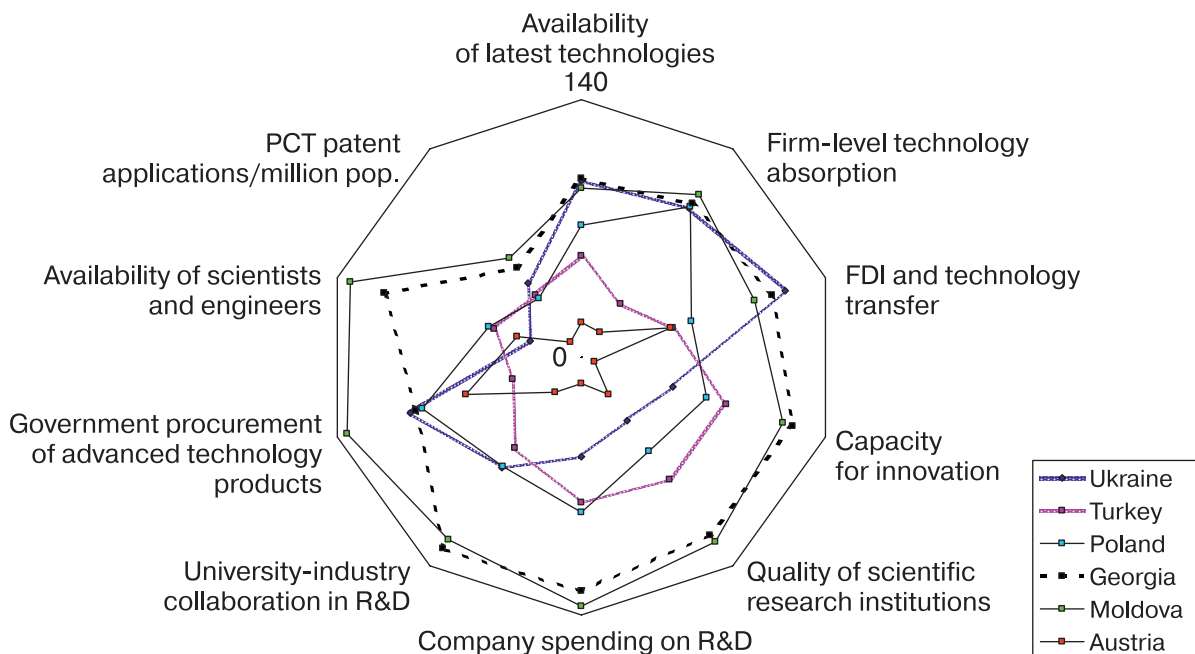
import replacement and reduce currency exchange rate.

Macroeconomic environment will fill better after starting big infrastructure projects that will involve different branches of economy and therefore will create new jobs and run economy. It is necessary to finance such infrastructure projects on PPP base. Also good result could be get by subsidizing setting up high-tech industries by national research institutions, universities and enterprises.

Improving the protection of intellectual property, including the financing of foreign patents, and developing different venture institutions will result in growth and evolution of Financial market.

For better understanding of Ukrainian gaps in innovation sphere different indicators of innovation connected pillars for the same countries were analyzed (**Fig. 2**).

Overall performance of Innovation and Technological readiness pillars are at the level of Poland



**Fig. 2.** GCI 2015–2016 Pillars “Technology readiness” and “Innovation”

and Turkey. The rate Availability of Scientists is even higher than Austria. Indicator “Availability of new technologies” indicates a low level of technology used in the country that corresponds with the State Statistics Service data that a part of enterprises of 5–6 technological level is near 3%, of 3rd — almost 50%.

Indicator “Firm-level of technology absorption” shows that enterprises are not interested in introducing new technologies in their work. Indicator “Foreign direct investment and technology transfer” shows the availability of technology transfer, and the extent to which foreign direct investment affect the influx of new technologies. Its low value is a reflection of a small amount of foreign investment in general, and the fact that they were not made in intangible assets.

It is interesting to note that in Austria parameters “FDI and Technology transfer” and “Government procurements” are below the level of the others in it. This may indicate that development of new technologies and their implementation is mostly on enterprises. However, this indicator in Ukraine is much lower, even from Poland. So it is necessary to develop an interest in science of enterprises. However, besides, Ukraine should work towards technology transfer from academic institutions.

Analysis done by Ministry of Education and Science showed that in total number of research projects performed by scientific organizations of Ukraine about 11% of the work resulted in developing new technologies, 12% — new products. The largest number of works (58%) are identified as “other” (methodological and normative-technical documentation, draft legal analysis and forecast documents, software and technological documentation, etc.). Besides, among the total amount of research projects during 4 years are implemented 60–65%.

Also, according to the State Statistics Service of Ukraine for the past ten years, investment in capital construction accounted for about 55% of the total investment in equipment and vehicles — about 35%, and in intangible assets — about 3% [12].

Most authors agree that despite the presence of nearly 200 regulations in the field of innovation, a lot of questions about the legal regulation of innovation still remain controversial [13–15].

Universities should focus students on one of three possible ways for successful future employment and career development, including:

- research or teaching activities;
- work as an employee with the ability to use the latest high-tech solutions;
- establishing own competitive, and thus innovative, business.

As in creation of scientific knowledge and innovation a huge role play higher institutions, a lot of MES initiatives in this sphere are connected with universities.

MES have already done some steps that were proposed above for contemporaneously improving of different GIC pillars:

- Law of Ukraine “On state regulation of activities in the field of technology transfer” has left the property rights on technology to the organization that created it under state budget financing;
- revenue received as a result of technology transfer belong to scientific institution and have to be used on innovation;
- Laws of Ukraine “On Higher Education” and “On Science and Science-technology Activity” provided an opportunity for universities and research institutions to form small companies that develop and implement innovative products by giving them property rights on intangible assets.

In addition, in order to increase opportunities for universities and research institutions to proceedings innovation Acts of the Cabinet of Ministers of Ukraine of 20.05.2015 № 305 and 24.06.2016 № 388 which significantly extends the list of paid services that can be provided by budgetary scientific institutions and universities, were approved. Meanwhile, Ministry of Education works on such initiatives:

- introducing of statistical observations according to the classification of industries in keeping with the share of spending on R&D or gross value added in volume sales (classification method of the Organization for Economic Cooperation and Development);
- simplification of procedures for obtaining state support for innovation;
- formation mechanisms for attracting private domestic investments in innovative venture capital funds;
- creation of the State Innovation Development Fund;
- determining the principles and forms of public-private partnership in the field of innovation (clusters, technological platforms);
- changes in Tax Code;
- preparing of Concept of innovative SMEs support;
- subsidizing creation of industrial enterprises of high-level sectors that will consist of such steps:
  - university makes research for industrial enterprise (in the amount of subsidies);
  - industrial enterprise directs its own funds in amount not less than 100 percent of the subsidies on creation of high-tech production;

- industrial enterprise additionally finances R&D in the amount not less than 20 percent subsidy.

## CONCLUSIONS

In the article is investigated the state of Ukraine in a number of ratings. It is found that despite the improvement of some of them, the ratings that indicate the industrial level of country show a negative trend.

In the article is the comparison of Ukraine with the countries that were at the same economic level at the beginning of the 1990s and have common economic and political goals is made.

In the article is presented information about the new initiatives of MES in the field of innovation.

## REFERENCES

1. 30+ grafikov i kart, kotorye dostupno obyasnayut agrobiznes Ukrainy [30+ charts and maps that are available to explain the Ukrainian agribusiness]. Available at: <http://businessviews.com.ua/ru/economy/id/20-grafikov-i-kart-kotorye-dostupno-objasnajut-agrobiznes-ukrainy-328/>
2. SIPRI Yearbook 2016. Available at: <https://www.sipri.org/sites/default/files/YB16-Summary-ENG.pdf>
3. Forbes 2016 World's Billionaires: Meet The Richest People On The Planet. Available at: <http://www.forbes.com/sites/luisakroll/2016/03/01/forbes-2016-worlds-billionaires-meet-the-richest-people-on-the-planet/#59ee160f41cb>
4. GDP per capita, PPP (current international \$). Available at: <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>
5. Doing Business 2016. Available at: <http://www.doingbusiness.org/reports/global-reports/doing-business-2016>
6. BDO International Business Compass. Available at: <https://www.bdo-ibc.com/home/>
7. A.T. Kearney Releases 2016 Global Services Location Index (GSLI). Available at: <http://www.prnewswire.com/news-releases/at-kearney-releases-2016-global-services-location-index-gsli-300201927.html>
8. The Global Innovation Index 2016. Available at: <https://www.globalinnovationindex.org/gii-2016-report>
9. The Global Competitiveness Report 2016–2017. Available at: [http://www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017\\_FINAL.pdf](http://www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf)
10. The Legatum Prosperity Index™ 2016. Available at: <http://www.prosperity.com/rankings>
11. These Are the World's Most Innovative Economies. Available at: <https://www.bloomberg.com/news/articles/2017-01-17/sweden-gains-south-korea-reigns-as-world-s-most-innovative-economies>
12. Kapitalni investitsii za vydami aktyviv za 2010-2015 roky [Capital expenditure by type of assets from 2010 to 2015]. Available at: [http://www.ukrstat.gov.ua/operativ/operativ2013/ibd/ibd\\_rik/ibd\\_u/ki\\_rik\\_u\\_bez.htm](http://www.ukrstat.gov.ua/operativ/operativ2013/ibd/ibd_rik/ibd_u/ki_rik_u_bez.htm)
13. Zhovnirchuk Ya.F. (2012) Analiz ta shliakhy vdoskonalennia normatyvno-pravovoi bazy dlia zabezpechennia rozvytku innovatsiinoi systemy Ukrainy [Analysis and ways to improve the regulatory framework for the development of innovative system of Ukraine] Electronic resource Effective economy, no 2. Available at: <http://www.economy.nayka.com.ua/?op=1&z=934>
14. Stoliarchuk N.M. (2016) Problemy normatyvno-pravovoho rehulivannia innovatsiinoi diialnosti [The problems of legal regulation of innovation]. Oblik i finansy APK: bukhhalterskyi portal [Accounting and finance agribusiness, accounting portal]. Available at: <http://magazine.faa.org.ua/problemi-normativno-pravovogo-regulyvannya-innovatsiinoi-diyalnosti.html>
15. Sheverdina O.V. (2014) Pravove zabezpechennia innovatsiinykh protsesiv yak faktor reformuvannia ekonomiky [Legal support of innovation processes as a factor in reforming the economy]. Pravo ta innovatsiine suspilstvo: elektronne vydannia [Right and innovative society: electronic edition], no. 2. Available at: <http://apir.org.ua/wp-content/uploads/2014/11/Sheverdina.pdf>

## СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

1. 30+ графиков и карт, которые доступно объясняют агробизнес Украины [Электронный ресурс]. — Режим доступа: <http://businessviews.com.ua/ru/economy/id/20-grafikov-i-kart-kotorye-dostupno-objasnajut-agrobiznes-ukrainy-328/>
2. SIPRI Yearbook 2016 [electronic resource]. — Access: <https://www.sipri.org/sites/default/files/YB16-Summary-ENG.pdf>
3. Forbes 2016 World's Billionaires: Meet The Richest People On The Planet [electronic resource]. — Access: <http://www.forbes.com/sites/luisakroll/2016/03/01/forbes-2016-worlds-billionaires-meet-the-richest-people-on-the-planet/#59ee160f41cb>
4. GDP per capita, PPP (current international \$) [electronic resource]. — Access: <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>
5. Doing Business 2016 [electronic resource]. — Access: <http://www.doingbusiness.org/reports/global-reports/doing-business-2016>
6. BDO International Business Compass [electronic resource]. — Access: <https://www.bdo-ibc.com/home/>
7. A.T. Kearney Releases 2016 Global Services Location Index (GSLI) [electronic resource]. — Access: <http://www.prnewswire.com/news-releases/at-kearney-releases-2016-global-services-location-index-gsli-300201927.html>
8. The Global Innovation Index 2016 [electronic resource]. — Access: <https://www.globalinnovationindex.org/gii-2016-report>
9. The Global Competitiveness Report 2016–2017 [electronic resource]. — Access: [http://www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017\\_FINAL.pdf](http://www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf)
10. The Legatum Prosperity Index™ 2016 [electronic resource]. — Access: <http://www.prosperity.com/rankings>
11. These Are the World's Most Innovative Economies [electronic resource]. — Access: <https://www.bloomberg.com/news/articles/2017-01-17/sweden-gains-south-korea-reigns-as-world-s-most-innovative-economies>
12. Капітальні інвестиції за видами активів за 2010-2015 роки [Електронний ресурс]. — Режим доступа: [http://www.ukrstat.gov.ua/operativ/operativ2013/ibd/ibd\\_rik/ibd\\_u/ki\\_rik\\_u\\_bez.htm](http://www.ukrstat.gov.ua/operativ/operativ2013/ibd/ibd_rik/ibd_u/ki_rik_u_bez.htm)
13. Жовнірчук Я.Ф. Аналіз та шляхи вдосконалення нормативно-правової бази для забезпечення розвитку інноваційної системи України / Я.Ф. Жов-

- нірчик // Електронне наукове фахове видання "Ефективна економіка". — 2012. — № 2 [Електронний ресурс]. — Режим доступу: <http://www.economy.nauka.com.ua/?op=1&z=934>
14. Столярчук Н.М. Проблеми нормативно-правового регулювання інноваційної діяльності / Н.М. Столярчук // Облік і фінанси АПК: бухгалтерський портал. — 2016 [Електронний ресурс]. — Режим доступу: <http://magazine.faaaf.org.ua/problemi-normativno-pravovogo-regulyuvannya-innovaciynoi-diyalnosti.html>
15. Шевердіна О.В. Правове забезпечення інноваційних процесів як фактор реформування економіки / О.В. Шевердіна // Право та інноваційне суспільство: електронне видання. — 2014. — Вип. 2 [Електронний ресурс]. — Режим доступу: <http://apir.org.ua/wp-content/uploads/2014/11/Sheverdina.pdf>

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### **ІННОВАЦІЙНА ДІЯЛЬНІСТЬ В УКРАЇНІ: СТАН, ПРОБЛЕМИ, ПЕРСПЕКТИВИ НОРМАТИВНО-ПРАВОВОГО РЕГУЛЮВАННЯ**

***Резюме.** Україна володіє багатими природними ресурсами та є провідним світовим виробником низки аграрних і промислових товарів. Але рівень інноваційного розвитку її підприємств і виробництва ними товарів із високим ступенем доданої вартості вкрай низький. У статті надано думку спеціалістів МОН щодо необхідних нормативних та інституційних змін у сфері інноваційної діяльності.*

***Ключові слова:** інновації, законодавство, індекс, конкурентоспроможність.*

**В. ШОВКАЛЮК**

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### **ИННОВАЦИОННАЯ ДЕЯТЕЛЬНОСТЬ В УКРАИНЕ: СОСТОЯНИЕ, ПРОБЛЕМЫ, ПЕРСПЕКТИВЫ НОРМАТИВНО-ПРАВОВОГО РЕГУЛИРОВАНИЯ**

***Резюме.** Украина обладает богатыми природными ресурсами и является ведущим мировым производителем ряда аграрных и промышленных товаров. Но уровень инновационного развития ее предприятий и производства ими товаров с высокой степенью добавленной стоимости крайне низок. В статье приведены мнения специалистов МОН о необходимых нормативных и институциональных изменениях в сфере инновационной деятельности.*

***Ключевые слова:** инновации, законодательство, индекс, конкурентоспособность.*

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