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AFTER VADYM HETMAN**

**STRATEGIC PRIORITIES FOR  
DEVELOPING UKRAINE AND GEORGIA:  
INNOVATION AND PARTNERSHIP**

**Scientific Editors Dmytro LUKIANENKO and  
Teimuraz BERIDZE**

**Monograph**



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The monograph is devoted to the study of the main priorities of development of two countries with similar conditions, similar destinies, economic and intellectual potential. The monograph presents the results of many years of work of prominent scholars of Ukraine and Georgia, which are dedicated to the problems of providing innovative development. The theoretical and methodological foundations of ensuring innovation development, formation of the national innovation system of the country are revealed. The system assessment of the available intellectual potential of the countries, the main tendencies and problems of modern development is presented. The monograph attempts to assess the position of Ukraine and Georgia in world business rankings, global markets and, in general, the global economy. Possible directions of joint cooperation and partnership are identified with the aim of strengthening positions, as well as promoting socio-economic and innovative development of countries. The monograph is intended for scientists, lecturers, postgraduates, students of economic specialties of higher educational institutions, representatives of state authorities.

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## CONTENT

Foreword (Dmytro Lukianenko).....	5
Foreword (Teimuraz Beridze).....	7
<b>Chapter 1. Historical and socio-economic prerequisites for the development of relations between Georgia and Ukraine. ....</b>	<b>11</b>
1.1. Comparative analysis of regional dynamics of Ukraine and Georgia (Victor Chuzhikov, Andrii Chuzhikov).....	11
1.2. Ukraine and Georgia in the international rankings “Doing business” and “Paying taxes” under the conditions of EU-integration processes (Nataliia Shalimova, Halyna Kuzmenko).....	29
1.3. Problems Of Investment Maintenance Of Agricultural Enterprises And The Ways Of Its Solutions (Galyna Fyliuk, Pimenova Olena).....	53
<b>Chapter 2. Priorities of socio-economic development of Georgia and Ukraine: innovative approaches and perspectives (Eter Kharashvili, Badri Gechbaia, Natela Tsiklashvili) .....</b>	<b>64</b>
2.1. Modern tendencies of economic development of Georgia and challenges: Comparative analysis of Georgia-Ukraine .....	64
2.2. Priorities of social-economic development and perspectives: innovative attitudes and models Actuality of problem.....	90
2.3. Innovative aspects of Ukraine-Georgia Energy Relations on the background of Association Agreement with the European Union (Paata Aroshidze, Gela Mamuladze).....	102
<b>Chapter 3. Innovative development in the XXI century: factors and resources. ....</b>	<b>120</b>
3.1. Strategic priorities of innovative development of institutional architecture of economy of Ukraine and Georgia (Valerii Osetsyki).....	120
3.2. Development of National Innovation Systems in the context of their global integration (Larysa Antonyuk, Borys Zaremskyi) ..	146
3.3. Intellectual potential of economic development in global	

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environment: Georgia and Ukraine (Ludmila Tsymbal).....	168
3.4. Higher Education’s Funding Model Transformation Of Georgia And Ukraine In The Context Of Integration To The European Higher Education Area (Oleksandr Levchenko, Anna Levchenko, Olga Tkachuk, Iлона Tsarenko) .....	181
<b>Chapter 4. Several Actual Global-Innovation Issues For The Realization Of Development Of Partnership Between Georgia And Ukraine (Anzor Abzalava). .....</b>	<b>200</b>
4.1. Technogenic Threat: Forecasts and reality .....	200
4.2. Technological Development: News and threats.....	206
4.3. Global and national economies: Theoretical-conceptual compatibility dimension .....	213
4.4. Regional economic cooperation and competition .....	219
<b>Chapter 5. Social aspects of innovative development of Ukraine and Georgia. ....</b>	<b>224</b>
5.1.Modern trends in the development of education in a global context (Iryna Kalenyuk, Antonina Dyakon). .....	224
5.2.Improving the standard of living as a strategic priority of Ukraine and Georgia (Olena Grishnova, Yurii Kharazishvili)....	245
<b>Chapter 6. Financial determinants of innovative development of countries under globalization. ....</b>	<b>278</b>
6.1. The key role of innovative investment in increasing the competitiveness of national economies (Yevgen Panchenko, Bogdan Stetsenko) .....	278
6.2. European practices of financing innovation: “Horizon 2020” and localization system. (Yevgen Panchenko, Natalya Rudukha).....	281
6.3. Innovation financing system (Yevgen Panchenko, Olga Lukianenko) .....	287
6.4. Models of financing of innovative process (Yevgen Panchenko, Natalya Rudukha) .....	294

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## FOREWORD

*Dmytro Lukianenko*

The global transformations of the second half of the 20th and the beginning of the 21st century have changed the world fundamentally, which in theory was reflected in the new global development paradigm, and in practice – in formation of global economy.

Intellectualization combined with the ability to continuous innovation, socialization with the priority of the most complete self-expression of the individual, ecologization of productions and life-sustaining activity in the paradigm of global thinking are the universal imperatives of the global success of national economies. In this context, national competitiveness ensures not only improvement of living standards of the population of the country, maintenance of stable positions by the national enterprises in the world market, but also socio-economic progress on an innovative basis, with the ability to withstand crises, preventing them or successfully neutralizing negative consequences. In addition, the extremely important object of research is, on the one hand, competitive potential of the European Union in the process of developing the idea of a highly competitive megaregional bloc and, on the other, new opportunities for development of bilateral relations on an innovative basis.

The methodological concept of research, the results of which are offered to the reader, involves problem-oriented consideration of the processes of socio-economic dynamics of Georgia and Ukraine, taking into account historical background and modern features of innovative cooperation.

The authors assume that effective development of our countries in modern conditions is primarily ensured by their ability to develop and implement innovative strategies. It is necessary to constantly search and use own and attracted innovations that change technology and business organization to maintain a high competitive status in the domestic and international mar-

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kets. At the macro level, the most adequate paradigm of knowledge economy is creation of innovative systems as an institutional precondition for formation of climate favorable for innovation, and at the micro level – development and implementation of innovative corporate strategies and creative management.

Particular attention is paid to assessing the innovative and intellectual potential of cooperation between Georgia and Ukraine, outlining the prospects for its effective implementation and targeted growth through development of education systems, achievement of modern social standards of life.

The uncertainty and contradiction in the prospects for world economic development obviously require the latest interdisciplinary ideas, approaches and research methods in identifying and evaluating phenomena of not only innovation and informatization, but also digitalization and virtualization. Security issues of sustainable development, the impact that Georgia and Ukraine really felt, are acutely relevant. The originality of our countries and economies based on common civilization values will provide synergistic effects of cooperation.

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## FOREWORD

*Teimuraz Beridze*

Inter-country (as well as interdisciplinary) research has a greater effect in scientific researches, and this primarily applies to social sciences, and that is the economy. A vivid example of such a study is a joint study (and, as a result, the publication of a collective monograph) - “Strategic Priorities for Developing Ukraine and Georgia: Innovation and Partnerships.”

The architectonics of the collective monograph, the very range of issues under consideration adequately responds to the stated goal. Based on the analysis of historical and socio-economic prerequisites for the development of relations between Ukraine and Georgia and priorities in the development of the two countries, conclusions are drawn about comparability with the development in the 21st century – innovative development and its factors and resources.

It should be noted, and this is the merit of the authors that specific issues are being considered – technological, the specifics of national economies, the regional aspect of the issues under consideration (cooperation and competition).

One can not ignore such an aspect in the monograph as social aspects of innovation development – education, intellectual development (and this factor is decisive in a competitive environment), the standard of living (in so far as this indicator is the result of any development).

Finally, the issues of financial security (determinants) of these two countries in the context of economic globalization (and its other parties). Here there are considered a wide range of issues – investments, European partnership practices, models for financing innovative processes.

This study will serve as a good tool for scientists, politicians and all persons interested in comparativistics in economic science.

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## CHAPTER 1.

### HISTORICAL AND SOCIO-ECONOMIC PREREQUISITES FOR THE DEVELOPMENT OF RELATIONS BETWEEN GEORGIA AND UKRAINE

#### 1.1. Comparative analysis of regional dynamics of Ukraine and Georgia

The rapid development of the global economy clearly revealed significant regional contradictions, some of which were known as early as the XIXth century (the difference in the standard of living of city and village residents, the increasing differentiation of the incomes of the population, as well as classic confrontation between labor and capital) and, at the same time, the emergence already at the end of the XXth century, new global challenges, among which a significant place was taken by the uncontrolled cross-border movement of capital, emergence of the outsourcing model of business development, hyperconcentration of innovation and investment in some specific localities of global economic space, the loss of the cities' industrial function, which a century ago was considered to the city-forming one. The internal regions of the leading countries also changed, with highly dynamic, world-class formations and, at the same time, old industrial areas, whose depressive character became evident. A special place in the new hierarchy of regions early XXI century was allocated to rural areas and, accordingly, to the agricultural sector in it.

Numerous subsidies, subventions, as well as national mechanisms and instruments for supporting agriculture led, on the one hand, to rapid growth of "visible" well-being. On the other hand it could have resulted in the possible bankruptcy of small and medium-sized farmers in the transition to a liberal regulatory model. Perception of the regional policy as the state's "internal

business” proved to be obsolete. The flows of foreign investments to certain regions of the country exceeded government allocations to depressive territories, and no governmental measures were able to ensure spatial harmonization. One should also pay attention to the fact, that there were no exceptions to this rule, and if such disproportion increased ethnic contradictions, the issue of the integrity of the country itself moved to the first position. There is a plenty of examples of such national economic asymmetries: the province of Quebec in Canada, Tibet in China, Scotland in the UK, Texas in the USA, Flanders in Belgium, Southern and Northern regions in Italy, Catalonia in Spain. Of course, the list can be continued. Such contradictions can last for a long time in the stage of relative equilibrium, but as a result of external forces they can exacerbate and lead to bloodshed, as is the case of Georgia and Ukraine now.

**Theoretical background of modern regional studies.** The necessary foundations for the development of regional theory, as it was then thought, were laid down in the XIXth - on the beginning of the XXth century by the outstanding German researchers I. Tünen and A. Weber. Their location theory was based on the concepts of perfect competition, profit maximization, economic rent. Alfred Weber’s approach also took account of choice of placement. Those were mostly pragmatic approaches, and the key question was only how optimal the model “raw materials – commodity – consumer” would be. Note that this was not about an external factor; all calculations were oriented to the domestic production and domestic consumption. The authors did not use terms like exports, competition, high technologies.

Already in the 1940s a groundbreaking, in its essence, book by A. Lesch appeared. It was devoted to a new organization of space. Its main messages were the studies of the effect of production concentration, which was fundamentally new, as well as the assessment of transportation costs, which naturally continued the Tünen-Weber methodology. A new model of spatial analysis — space economy turned into a natural development of the above-mentioned theory, which continued to remain relevant until the 1990s.

It is worth mentioning, that during last 25 years global regional studies' methodology was in a systemic crisis, which revealed itself in a number of directions, the most important of which are:

- a protracted inter-paradigm period, within which theoretical uncertainty constantly makes itself visible;
- significant uptake of virtual (virtualized) products, supply and demand for which form a delocalized market;
- decreasing influence of local factors on the development of regional economy in line with the growing impact of global determinants, defined by global supply and demand;
- absence (anywhere in the world) of effective models of regional regulation and, as a result, the emergence of new depressive regions (so called “black holes”), which each year increase the volume of consumption of subsidies, in the process of providing targeted aid;
- emergence of hyper-agglomerations and smart-cities, which are identified in 3D-form, as the dimensions of their expansion go far beyond the 2D space, covering upward and downward vectors of business activities growth.

Not surprisingly, the most significant was the process of active production of new theories, which most fully manifested itself in the 1990's – early 2000's. The first such theoretical work was “New regionalism” — a concept developed by M. Keating<sup>1</sup>. It implied gradual departure from the “leveling off” policy and transition to the neo-liberal regulatory instruments. The major effect of this theory would be the creation of “Europe of Regions” model. It is also worth mentioning, that a year earlier the prominent book “The Political Economy of Regionalism” by M. Keating and J. Loughlin<sup>2</sup> was

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1 Keating M. The New Regionalism in Western Europe. Territorial Restructuring and Political Change. – Cheltenham: Edward Elgar Publishers. 1998. – 242 p. [in English]

2 Keating M., Loughlin J. The Political Economy of Regionalism. – London – Portland: Frank Cass, 1997. - 491 p. [in English]

published. At that time it brought together virtually everything, which was known about regionalism.

The intensification of contradictions between cities and individual territories was the focus of attention of many scientists who boldly advanced various new theories. They dealt with competitiveness of Europe (S. Hardy, M. Hart, L. Albrechts, A. Kotos)<sup>3</sup>, city / megalopolis competition (C. Jensen-Butter, A. Shachar, J. Weesep)<sup>4</sup>, local competition, which its author H. Siebert<sup>5</sup> views through the prism of the international division of labor.

Some new trends of regional development under conditions of global competition were identified by M. Storper<sup>6</sup> with his regional world model, M. Geddes<sup>7</sup> with his local partnership concept, aimed at leveling off regional potentials, and with a quite original concept of bioregionalism by M. McGinnis<sup>8</sup>, which was based on natural-geographic planning.

An important contribution to the regional studies' methodology at the abovementioned stage was made by a number of fundamental works on regional planning by U. Wannop (1995)<sup>9</sup>, W. Salet and A. Faludzy (2000)<sup>10</sup>.

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- 3 Hardy S., Hart M., Albrechts L., Kotos A. A Enlarged Europe: Region in Competition? – London: Jessica Kingsley, 1995.-342 p. [in English]
  - 4 European Cities in Competition / Ed. by C. Jensen-Butter, A. Shachar, J. Weesep: Brookfield. – Vermont: Avebury, 1997 – 530 p. [in English]
  - 5 Siebert H. Locational Competition: A. Neglected Paradigm in the international Division of Labour // *The World Economy*. – 2006. - №2 (29). – P. 137-159. [in English]
  - 6 Storper M. *The Regional World, Territorial Development in a Global Economy*. – New York-London: The Guilford Press, 1997. – 338 p. [in English]
  - 7 Geddes M. Tackling Social Exclusion in the New Orthodoxy of Local Partnership // *International Journal of Urban and Regional Research*. – 2000. – Vol. 24 (4). – P. 782-800. [in English]
  - 8 McGinnis M. *Bioregionalism*. – London: Routledge, 1999. – 525 p. [in English]
  - 9 Wannop U.A. *The regional Imperative: Regional Planning and Governance in Britain, Europe and United States*. – London: Jessica Kingsley, 1995. – 441 p. [in English]
  - 10 Salet W., Faludzy A. *The Revival of Strategic Spatial Planning*. – Amsterdam: Koninklijke NA, 2000. – 300 p. [in English]

These authors' ideas were used for the creation of the new EU regional policy concept, based on the principles of complementarity, subsidiarity, and programming. Nevertheless, it was too early to talk about the significant successes of the concept, which was clearly demonstrated by a special study by A. Rodriguez-Pose<sup>11</sup>. This work has once again demonstrated that the process of regional convergence in Europe was quite long. It became clear, that one could hardly count on rapid advancement in it, despite the considerable volumes of additional financing for depressive regions. At the same time, a number of authors, in particular J. Simmie<sup>12</sup>, argued reasonably enough the growing role of innovations and the obvious poles of growth, which became the leading megacities of the world.

A distinctive feature of the modern period of development of regional science is a clearer than earlier positioning of its possible trends. These include the processes of *localization*, which should be understood as a hyper-concentration of production factors in a small area, which provides for rapid technological breakthrough in the global market, mainly innovative products (M. Pill<sup>13</sup>, as well as J. Morphet<sup>14</sup>) and, at the same time, contributes to decentralization of powers and resources; *clustering*, which should be understood as the creation of competitive production within the innovation-oriented zone of a certain university or research laboratory (C. Saublens, G. Bonas, K. Husso<sup>15</sup>); the *development of innovative regions* (J.

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11 Rodriguez-Pose A. Convergence or divergence? Types of regional responses to socio-economic change in Western Europe / Andres Rodrigues-Pose // Tijdschrift voor Economisch en Sociale Geografie. – 1999. – Vol. 90 (4). – P. 363-378. [in English]

12 Simmie J. Innovative Cities. – London: Spoon Press, 2001. – 254 p. [in English]

13 Pill M. The Sub-Local impacts of Localism: Evidence from Two Local Authority Area / M. Pill. – Cardiff: Political Studies Association, 2013. – P.3. [in English]

14 Morphet J. The New Localism / J. Morphet // Town and Country Planning. – 2004. - №73 (10). – P.292. [in English]

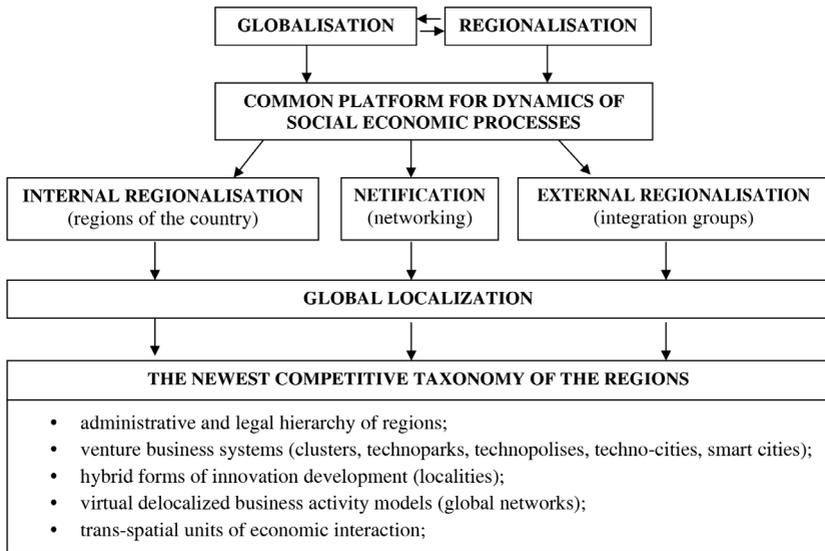
15 Saublens C., Bonas G., Husso K. Regional Research Intensive Clusters and Science Parks: Report prepared by an independent expert group. – Brussels: European Commission, 2008. – 152 p. [in English]

Clark, Hsin-I Huang, J. Walsh<sup>16</sup>), *creativization*, which is based on the development of creative entrepreneurship (J. Howkins<sup>17</sup>), as well as *medialization*, which provides for the creation of a certain image of the region through the media (L. Küng<sup>18</sup>).

At the same time, it should be noted that the main scientific trend of modern regional dynamics has become the study of megalopolises and smart cities, the increasing role of which in the global economy is difficult to overestimate. It is indicative, that in some cases we can talk about neoliberal cities, as M. Storper<sup>19</sup> does, their theory and possible evolution (G. Pinson, Ch. Morel *Journal*<sup>20</sup>) or about the new regionalism of multi-cities (D. Wachsmuth<sup>21</sup>). It is understandable that new theories (concepts) are pushing the relevant researchers to more pragmatic steps to obtain evidence. At the same time, the use of the possibilities of econometrics (G. Dagnachew Abate<sup>22</sup>) can be rather indicative.

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- 16 Clark J., Hsin-I Huang., J. Walsh. A typology of «innovation districts»: what it means for regional resilience / Jennifer Clark, Hsin-I Huang and John P. Walsh // *Cambridge Journal of Region, Economy and Society*. – 2010. – Vol. 3(1). – P.121-137. [in English]
  - 17 Howkins J. *The creative economy. How people make money from ideas*. – London: Penguin Books, 2007. – 270 p. [in English]
  - 18 Küng L. *Strategic management in the Media. From theory to practice* / L. Küng. – London: Sage, 2009. – 248 p. [in English]
  - 19 Storper M. The Neo-Liberal City as Idea and Reality / Michael Storper // *Territory, Politics, Governance*. – 2016. – Vol. 4 (№2). – P.241-263. [in English]
  - 20 Pinson G., Morel Journal Ch. The Neoliberal City – Theory, Evidence, Debates / Gilles Pinson, Christelle Morel *Journal* // *Territory, Politics, Governance*. – 2016. – Vol. 4 (№2). – P. 137-153. [in English]
  - 21 Wachsmuth D. Competitive multi-city regionalism: growth politics beyond the growth machine / David Wachsmuth // *Regional Studies*. – 2017. – Vol. 51 (№ 4). – P. 507-653. [in English]
  - 22 Dagnachew Abate G. On the link between Voluatility and Growth: A Spatial Econometrics Approach / Girum Dagnachew Abate // *Spatial Economic Analysis*. – 2016. – Vol. 11 (№1). – P. 27-45. [in English]

**Structural disposition of Ukrainian and Georgian regions in the global hierarchical system.** Comparison of the elements of the “embeddedness” of the regions of a particular system should begin, from our point of view, with the identification of the nature of the processes, dominating in the global (and European) economy. Such an attempt to identify national regions was undertaken by the authors in Figure 1.1.



**Figure 1.1. Structural model of the regional studies' evolution.**

It should be noted that the very concept of “region” can be defined from the position of internal regionalization, which is a historically and economically formed territory, and external regionalization, where “region” is defined as a cumulative inter-country territory with certain features, which are not completely clarified. From this point of view, a fundamentally new approach is to single out one more trend — networking, a phenomenon that is hard to investigate with the help of traditional methods. Moreover, ac-

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

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According to the British scientist T. Herrschel<sup>23</sup>, the very process of regional development of individual territories can quickly lead to the marginalization of other relevant areas. Under such conditions, government regulation instruments may not be effective, because the process of global localization may be dominant, which presupposes a new concept of competitive taxonomy; it includes both a rigid linkage to the regions existing within the country (the administrative legal hierarchy), and a flexible advisory system, which is based on a new model for the development of highly dynamic entrepreneurial (primarily venture) systems.

It should be noted that the regional growth models shown in Figure 1 are intrusive on the one hand, as they may both contain several regions of the country, and operate within the confined space of one of them. On the other hand, they are rather risky, because innovative products and solutions may not always be in demand. Nevertheless, it would be strategically right to identify the regions existing in Ukraine and Georgia with those that exist in the European Union (Figure 1.2).

<b>UKRAINE</b>	<b>GEORGIA</b>
<b>NUTS - 1</b>	<b>NUTS - 2</b>
<b>Kiev, Kharkov, Donetsk, Odessa, Dnipro (NUTS - 2)</b>	<b>Tbilisi (probably NUTS - 2)</b>
<b>Oblast of Ukraine (NUTS - 2)</b>	<b>Region of Georgia (NUTS - 3)</b>
<b>Regions of Ukraine (Have to be aggregated for the identification at the level NUTS - 3)</b>	-

**Figure 1.2. The corporate model of identification of regions of Ukraine and Georgia from the standpoint of European taxonomy (NUTS - 1, NUTS - 2, NUTS - 3)**

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23 Herrschel T. Regional Development, Peripheralisation and Marginalisation / Tassilo Herrschel // The role of regions?, Networks, scale, territory. – Stockholm: Kristianstads Boktryckeri, 2011. – P. 85-102. [in English]

The EU official regional taxonomy NUTS presupposes a three-level system of internal territories identification: NUTS-1 – for the biggest regions, NUTS-2 – for the middle ones, and NUTS-3 – for the smaller ones. At the same time national authorities can further detail the taxonomy, using levels NUTS-4, NUTS-5, which are not identified by the European Commission, but which are included to national statistical monitoring. A methodological problem of modern EU is the identification of agglomerations and clusters, some of which, oddly enough, fall out of general hierarchy, but are quite successfully studied by scientists, such as, for instance, Ph. McCann<sup>24</sup>.

In accordance with this system, and also taking into account the strategic interests of Georgia and Ukraine regarding integration into the European Union, the following structural model could be assumed.

For Ukraine, it could be such a gradation - NUTS-1 (whole country), NUTS-2 (regions (oblasts) of the country, excluding millionaire-cities, which by themselves can also claim NUTS-2 level), NUTS-3 (enlarged “rural” areas with population of 100 thousand people and more). Polish regional reforms of the 1990s could serve as an analogue model.

For Georgia, there are several options. The first of them is the Slovak one. NUTS-1 is the whole territory of Georgia, NUTS-2 is the capital of the country, as well as some enlarged existing regions. Further — NUTS-3. The second option is the Baltic one, where NUTS-2 level is clearly defined — the entire country, then they define NUTS-3 level regions. In this case, an explicit exception would be Tbilisi with a population of 1,1 million (European level NUTS-2) and Racha-Lochkhumi & Kvemo Svaneti (31 thousand people).

**Comparative economic analysis of the regions of Georgia and Ukraine.** In the context of modern statistical reporting and numerous international comparisons of various indicators, it is very important to identify

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24 McCann Ph. *Modern Urban and Regional Economics*. – Oxford: Oxford university Press, 2013. – P. 49-71. [in English]

the most significant of them, which, in fact, may serve as a ground not only for analysis, but also for the conclusions, which can be used to develop government strategies and programs. Well-known western researchers M. Fujita, P. Krugman, A. Venables<sup>25</sup> believe that the main objects of research should include cities, regions and the nature of international trade of the region. At the same time, they insist on the analysis of industrial clusters (pp. 283 - 307), which quite accurately reflect the main trends of economic development of the leading countries. Agreeing, on the whole, with the above-stated heuristic system, it should be noted that, from our point of view, sufficiently illustrative elements of comparative analysis could be: analysis of population dynamics, the structure of gross value added, the level of attracted foreign direct investment, the unemployment rate and its dynamics etc. Statistical data presented in this section are mainly taken from two sources: the National Statistics Office of Georgia<sup>26</sup> and the State Statistical Service of Ukraine<sup>27</sup>.

The analysis of digital data made it possible to identify a number of common and distinctive features of the development of the regions of Georgia and Ukraine, which can be reduced to the following:

1. The population of the two countries has been actively declining over the past twenty-five years, which has been due to a number of reasons:

- difficult economic conditions of the 1990s;
- active military conflicts on the territory;
- low efficiency of implemented reforms (it was and remains the main problem of Ukraine);

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25 Fujita M., Krugman P., Venables A. *The Spatial Economy. Cities Regions and International Trade.* – London: The MIT Press, 2001. – 367 p. [in English]

26 National Statistics office of Georgia [Electronic resource] Retrieved from: [www.geostat.ge](http://www.geostat.ge). [in English]

27 State statistis service of Ukraine [Electronic resource] Retrieved from: [www.database.ukrcensus.gov.ua](http://www.database.ukrcensus.gov.ua) [in Ukraine]

- active migration of the population abroad, which is most noticeable in the western regions of Ukraine (EU countries), as well as in the eastern regions (RF);
- the decline in industrial production in the cities, which provided a rather paradoxical process of population growth in the capitals and a decrease in the number of people in the provincial centers, this led to the fact that two Ukrainian millionaire-cities (Dnipro and Donetsk) ceased to be such in 2016 (Table. 1.1)

**Table 1.1**

**The biggest cities of Ukraine and Georgia,  
as of 1.01.2017, thousand inhabitants.**

<b>Ukraine, as of 1.01.2017</b>	<b>Georgia, as of 1. 01. 2016</b>
<b>1. Kyiv – 2 927</b>	<b>1.Tbilisi – 1082</b>
<b>2. Kharkiv – 1 445</b>	<b>2.Batumi – 154</b>
<b>3. Odessa – 1 010</b>	<b>3.Kutaisi – 148</b>
<b>4. Dnipro – 986</b>	<b>4.Rustavi – 126</b>
<b>5. Donetsk – 927</b>	<b>5.Suhumi – 64</b>
<b>6. Zaporizhia – 749</b>	<b>6. Gori – 64</b>
<b>7. Lviv – 729</b>	<b>7. Zugdidi – 33</b>
<b>8. Kryvyi Rih – 636</b>	<b>8.Poti – 42</b>
<b>9. Mykolaiv – 489</b>	<b>9.Tskhinvali – 30</b>

2. Internal migration in Georgia and Ukraine is similar to what existed in all post-socialist countries. Its main trend was the so-called “capital-city maximum” of economic activity. As of 01.01.2017 6,9 % of the country’s population lived in Kiev, while in Tbilisi it was 27,7 %. At the same time, the capital of Ukraine became the leader in attracting direct foreign investments – 22,6 billion USD (52,1 % of total volume, as of 01.01.2017). This kind of asymmetry is characteristic of Georgia. In general, in many countries of Europe the same pattern is not an exception. The FDI indicator for virtually all capitals of Central Europe is rather high (i.e. exceeding the threshold of 50 % in some cases) in the Czech Republic, Hungary, Estonia, Slovakia it exceeds 60%.

3. Important component for the analysis of economic development of regions is the structure of gross value added (GVA), as well as its dynamics. The contrasts here are also quite noticeable. In 2015 the capital of Georgia, Tbilisi, accounted for 42,4 % of the country's output. At the same time, the share of such regions as Samtskhe-Javakheti and Guria was respectively 2,45 % and 2 %. Close to Georgia was the situation in Ukraine. The indicator for Kyiv was 23,2 % of national volume, while the share of Chernivtsi and Lugansk regions remained practically low, respectively 1 % and 1,2 %. A similar indicator was the Gross Regional Product, per capita. This figure for the capital of Ukraine was 3,36 times higher than the national average, while in the Lugansk region (without taking into account the territories not controlled by Ukraine) it was 4,3 times smaller. General parallels can be seen in the structure of the GVA. For example, the share of wholesale and retail trade, as well as the repair of motor vehicles and motorcycles, was approximately equal in both capitals (30,1% in Kiev and 26,0% in Tbilisi). At the same time, the agrarian sector is leading in the regions that are lagging behind (36.8% in the Kirovograd and 38.1% in the Kherson regions of Ukraine, 24.7% in the Guria of Georgia). It should also be noted that the statistical accounting in two countries relative to the structure of the GVA is different, in Georgia, for example, ten sectors of the national economy are analyzed, and in Ukraine – 19 sectors.

4. A significant deformation in the course of reforms in both countries was characteristic of the internal labor market, which became more and more internationalized every year. Simultaneously, its intellectual component was significantly reduced, which was directly related to the growing need for those engaged in the creative sphere. On the other hand, the need for Western countries, and especially the EU in the traditional work professions, has significantly increased. Especially it became noticeable in the regions of Western Ukraine (Volyn, Lviv, Ternopil, Zakarpattia, Chernivtsi region). According to various sources, currently over 1 million Ukrainian citizens work in Poland, as well as in Italy, Germany, Spain and Greece.

Traditionally significant, not paying attention to all the dramatic events in Ukraine in recent years, remains the Russian market.

It should be noted that the unemployment rate (according to ILO methodology) both in Ukraine (9.7%) and Georgia (11.8%) remains approximately the same (2016). At the same time, it differs significantly by region from 5.4% in Kakheti to, whatever paradoxical it may seem, 22% in Tbilisi (2016). Traditionally low for many years there was unemployment in the capital of Ukraine. Kiev at the same time acted as a kind of “magnet” for the unemployed from all over Ukraine. The unemployment rate in it during the sample survey by the State Statistics Service (January-September 2017) was 7.1% of the working-age population, an even lower figure was in Kharkiv (6.1%) and Kiev (6.4%) regions. It is also easy to assume that the destroyed enterprises of Donbas and mass layoffs of workers and employees significantly affected the labor market of this region. The unemployment rate in the Lugansk region reached 17.8%, in Donetsk region – 15.0%. At the same time, it should be noted that major factors stimulating the migration processes in Ukraine include the lowest salary in Europe, significant share of moonlight economy, high level of corruption, the problem of single-parent families, which spread as a result of parents going to work abroad.

**Creation of a new image of the region in domestic and foreign media.** In the modern economy, the role and importance of the media is difficult to overestimate, since they create the image of the region favorable for visiting foreign tourists, as well as for possible investment. The discourse interweaving of information, advertising, shows, the formation of a positive image of people who live in this area, actively affects the consolidated image of the region. In cases when the national mass-media are amplified by the influence of global corporations in this sphere, we should speak of the so-called media imperialism, which, with the light hand of P. Scannel<sup>28</sup>

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28 Scannel Paddy. Media and Communication. – Los Angeles – London: Sage, 2008. – 303 p.[in English]

(p. 125), has become the dominant sector of the global economy in which hundreds of billions of dollars rotate. Two other, no less famous authors J. Wagner, T. Maclean<sup>29</sup> went even further. They, basing on their own analysis of the American TV-market clearly identified the main forms of influence on the viewer through a number of television formats (elegy, paranoia, new lightning, video, apocalypse, nostalgia, feminization, nightmare, serials). Of course, the ideologization of television and the Internet presupposes the development of a new model of productive media management, as L. Mitchell<sup>30</sup> argues rather reasonably.

It should be noted that the modern media space of both Ukraine and Georgia is a fairly large conglomerate of various interests, information strategies and the advertising market. At the same time, it is very important that there are no such TV-products that would aim not only at forming a new image of the large territories of the analyzed countries, but would also serve as a basis for attracting investments and innovations. As experience shows in the structure of the Georgian and Ukrainian media markets, the share of Russian media products remains, although not dominant, but also significant (Figures 1.3 and 1.4).

During 2016 – 2017 the share of Russian media in Ukraine radically decreased. However it remains quite high, notwithstanding all the strict regulative measures, which have been undertaken. Major impact was caused by the limitation of use of the Russian social media, introduced late 2016 – early 2017.

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29 Wagner Jon Nelson, Maclean Tracy Bitá. *Television at the Movies. Cinematic and Critical Approaches to American Broadcasting.* – New York – London, 2008. – 223 p. [in English]

30 Mitchell L. *Production management for television.* – NY: Routledge, 2009. – 115 p. [in English]

CHAPTER 1. HISTORICAL AND SOCIO-ECONOMIC PREREQUISITES FOR THE DEVELOPMENT OF RELATIONS BETWEEN GEORGIA AND UKRAINE

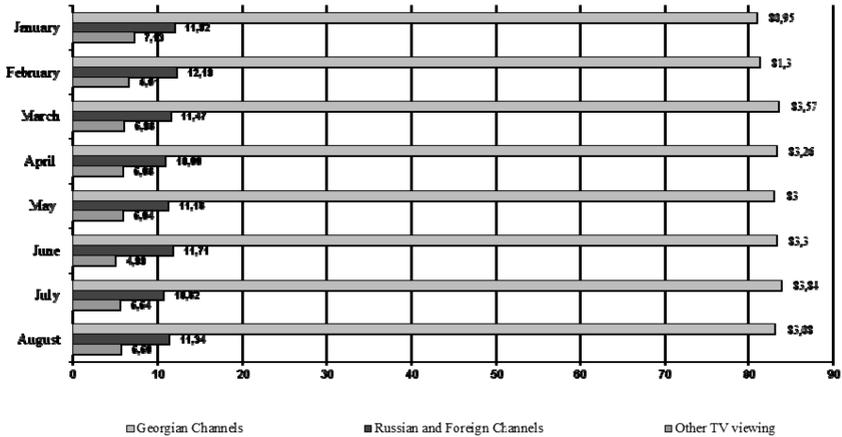


Figure 1.3. What Georgia watches on TV? January - August 2016 SHR%.

Source: <http://www.nielsen.com/us/en/insights/news/2017/welcome-to-the-database-podcast.html>

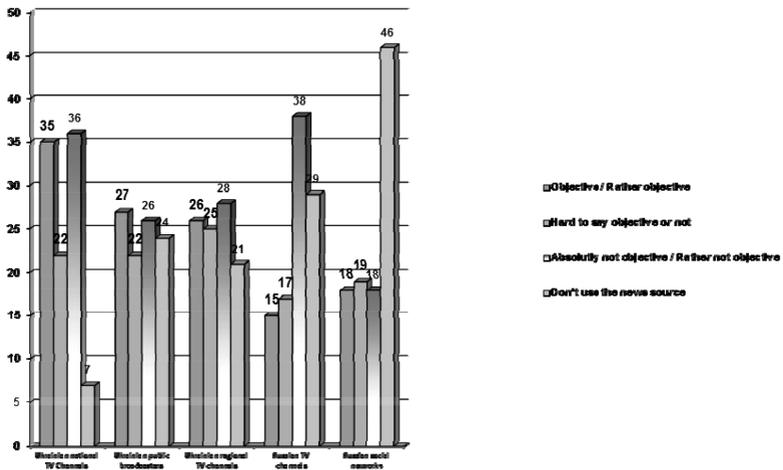


Figure 1.4. Objectivity assessment of the news sources in Ukraine, 2016, SHR %.

Source: [http://osvita.mediasapiens.ua/monitoring/in\\_english/analytical\\_report\\_on\\_the\\_study\\_counteraction\\_to\\_russian\\_propaganda\\_in\\_the\\_conflict\\_region/](http://osvita.mediasapiens.ua/monitoring/in_english/analytical_report_on_the_study_counteraction_to_russian_propaganda_in_the_conflict_region/)

In general, modern regional structure of Ukraine and Georgia meets the norms of the EU spatial hierarchy both in terms of area and population. Nevertheless, it presupposes further regional reforms, which should be systemic in nature and cannot be reduced only to the regulation of economic and social indicators.

It is extremely important to protect the national information space and the formed positive image of the region in the global economy.

### **REFERENCES:**

- Clark J., Hsin-I Huang, J. Walsh.** A typology of «innovation districts»: what it means for regional resilience / Jennifer Clark, Hsin-I Huang and John P. Walsh // Cambridge Journal of Region, Economy and Society. – 2010. – Vol. 3(1). – P.121-137. [in English]
- Dagnachew Abate G.** On the link between Volatility and Growth: A Spatial Econometrics Approach / Girum Dagnachew Abate // Spatial Economic Analysis. – 2016. – Vol. 11 (№1). – P. 27-45. [in English]
- European Cities in Competition / Ed. by C. Jensen-Butter, A. Shachar, J. Weesep: Brookfield. – Vermont: Avebury, 1997 – 530 p. [in English]
- Fujita M., Krugman P., Venebles A.** The Spatial Economy. Cities Regions and International Trade. – London: The MIT Press, 2001. – 367 p. [in English]
- Geddes M.** Tackling Social Exclusion in the New Orthodoxy of Local Partnership // International Journal of Urban and Regional Research. – 2000. – Vol. 24 (4). – P. 782-800. [in English]
- Hardy S., Hart M., Albrechts L., Kotos A.** A Enlarged Europe: Region in Competition? – London: Jessika Kingsley, 1995.-342 p. [in English]
- Herrschel T.** Regional Development, Peripheralisation and Marginalisation / Tassilo Herrschel // The role of regions?, Networks, scale, territory. – Stockholm: Kristianstads Boktryckeri, 2011. – P. 85-102. [in English]

- Howkins J.** The creative economy. How people make money from ideas. – London: Penguin Books, 2007. – 270 p. [in English]
- Keating M.** The New Regionalism in Western Europe. Territorial Restructuring and Political Change. – Cheltenham: Edward Elgar Publishers. 1998. – 242 p. [in English]
- Keating M., Loughlin J.** The Political Economy of Regionalism. – London – Portland: Frank Cass, 1997. - 491 p. [in English]
- Küng L.** Strategic management in the Media. From theory to practice / L. Küng. – London: Sage, 2009. – 248 p. [in English]
- McCann Ph.** Modern Urban and Regional Economics. – Oxford: Oxford university Press, 2013. – P. 49-71. [in English]
- McGinnis M.** Bioregionalism. – London: Routledge, 1999. – 525 p. [in English]
- Mitchell L.** Production management for television. – NY: Routledge, 2009. – 115 p. [in English]
- Morphet J.** The New Localism / J. Morphet // Town and Country Planning. – 2004. - №73 (10). – P.292. [in English]
- National Statistics office of Georgia [[Electronic resource] Retrieved from: [www.geostat.ge](http://www.geostat.ge). [in English]
- Pill M.** The Sub-Local impacts of Localism: Evidence from Two Local Authority Area / M. Pill. – Cardiff: Political Studies Association, 2013. – P.3. [in English]
- Pinson G., Morel Journal Ch.** The Neoliberal City – Theory, Evidence, Debates / Gilles Pinson, Christelle Morel Journal // Territory, Politics, Governance. – 2016. – Vol. 4 (№2). – P. 137-153. [in English]
- Rodrigues-Pose A.** Convergence or divergence? Types of regional responses to socio-economic change in Western Europe / Andres Rodrigues-Pose // Tijdschrift voor Economisch en Sociale Geografie. – 1999. – Vol. 90 (4). – P. 363-378. [in English]
- Salet W., Faludzy A.** The Revival of Strategic Spatial Planning. – Amsterdam: Koninklijke NA, 2000. – 300 p. [in English]
- Saublens C., Bonas G., Husso K.** Regional Research Intensive Clusters and Science Parks: Report prepared by an independent expert group. – Brussels: European Commission, 2008. – 152 p. [in English]

- Scannel Paddy.** Media and Communication. – Los Angeles – London: Sage, 2008. – 303 p. [in English]
- Siebert H.** Locational Competition: A. Neglected Paradigm in the international Division of Labour // The World Economy. – 2006. - №2 (29). – P. 137-159. [in English]
- Simmie J.** Innovative Cities. – London: Spoon Press, 2001. – 254 p. [in English]
- State Statistics Service of Ukraine [Electronic resource] Retrieved from: [www.database.ukrcensus.gov.ua](http://www.database.ukrcensus.gov.ua). [in Ukrainian]
- Storper M.** The Neo-Liberal City as Idea and Reality / Michael Storper // Territory, Politics, Governance. – 2016. – Vol. 4 (№2). – P.241-263. [in English]
- Storper M.** The Regional World, Territorial Development in a Global Economy. – New York-London: The Guilford Press, 1997. – 338 p. [in English]
- Wachsmuth D.** Competitive multi-city regionalism: growth politics beyond the growth machine / David Wachsmuth // Regional Studies. – 2017. – Vol. 51 (№ 4). – P. 507-653. [in English]
- Wagner Jon Nelson, Maclean Tracy Bit.** Television at the Movies. Cinematic and Critical Approaches to American Broadcasting. – New York – London, 2008. – 223 p. [in English]
- Wannop U.A.** The regional Imperative: Regional Planning and Governance in Britain, Europe and United States. – London: Jessica Kingsley, 1995. – 441 p. [in English]

## **1.2. Ukraine And Georgia In The International Rankings “Doing Business” And “Paying Taxes” Under The Conditions Of Activation Of Eu-Integration Processes**

The development of entrepreneurship and creating a favorable environment for its functioning is a priority of the state, as “an invisible hand of the market” does not always provide essential and equal conditions. The importance of assessing the conditions and their comparability worldwide are crucial for investors, creditors and other interested parties (“stakeholders”) because they are interested in the state of development, specific conditions and protection of their interests.

One of the indicators of the ease of doing business in the world is the international rankings which include the assessment of the taxation system of the country. The most popular international ranking assessing the ease of doing business in the world recently is “Doing Business” index which is prepared by The World Bank Group and is promulgated at <http://www.doingbusiness.org.ua>. “Doing Business” index determines the quality of business regulations which enhance or constrain business activity, the use of the regulations in different countries, regions and selected cities.

Among the areas of evaluation much emphasis is put on tax system. The “Paying Taxes” indicator which is an important component of the ranking is additionally published in separate reports “Paying Taxes” which are compiled by the World Bank in collaboration with the auditing firm PricewaterhouseCoopers (PwC) to assess the quality of the tax system for business and are officially published on the website <http://www.pwc.com>.

A continuous assessment and comparative analyses, identification of the factors that influence the changes of indicators and their critical assessment is an insistent task of scientific and practical direction.

The issue of Ukraine’s place in the international rankings in various aspects (entrepreneurship, impact on economic security, elimination of infor-

mation asymmetry at the macroeconomic level, investment attractiveness of the country, human development, the effectiveness of the institution of bankruptcy, development of the taxation system and implementing tax policy etc.) was studied by the scholars L. Antoniuk, O. Bilorus, O. Butska, B. Danylyshyn, Ya. Zhalilo, Yu. Ivanov, I. Kryvov'yazyuk, D. Lukyanenko, O. Moldovan, V. Moroz, V. Muntiyan, G. Pasternak-Taranushenko, N. Pedchenko, O. Plastun, D. Pokryshka, I. Repina, T. Chechetova-Terashvili, O. Shkurpiy, M. Shuba, Yu. Hvatov, G. Yastrebova et al. The scholars critically analyze the methodology of calculation of the international rankings; constantly develop complex scientific and practical recommendations to improve the investment, business and tax environment in Ukraine. Nevertheless, we consider the appropriate deep study of the place of Ukraine and Georgia in the international rankings with a focus on the assessment of the taxation system as an important and integral part of the business environment. Such comparative analysis is important because Ukraine and Georgia had almost identical starting positions for the development after the collapse of the USSR, and now both countries are on the way to intensifying the processes of European integration.

The objective of the study is the comparative characteristics of the positions of Ukraine and Georgia among other countries by the international "Doing Business" and "Paying Taxes" rankings.

"Doing Business" is the ranking which has existed since 2003 and is usually published in autumn. The number of countries covered by the ranking is constantly increasing: 2004 – 133, 2005 – 145, 2006 – 155, 2007 – 175, 2008 – 178, 2009 – 181, 2010-2012 – 183, 2013 – 185, 2014-2016 – 189, 2017-2018 – 190. The studies indicate not only the problems that hold back business development but determine the cause and include recommendations on the necessary reforms.

Currently the ranking consist of 11 indicators including ten major and one extra (table 1)<sup>31</sup>. The additional indicator describes the state of the labour market regulation, and its specificity is that it is not included in comprising the overall ranking (in 2011 a similar indicator was part of the main indicators).

**Table 1**

**“Doing Business” indicators**

<b>Indicator</b>	<b>Description</b>
<i>Basic</i>	
<i>Starting a business</i>	reveals the bureaucratic and legal obstacles that an entrepreneur must overcome in the process of creation and registration of a new company. The total number of procedures as well as their costs and duration which entrepreneurs must undergo to register a limited liability company from applying to the beginning of operation are determined
<i>Dealing with construction permits (till 2008 - Dealing with licenses)</i>	records all procedures required for a business in the construction industry to build a warehouse along with the time and cost to complete each procedure; deals with building regulations, including approvals, permit issuance and inspections
<i>Getting electricity</i>	records all procedures required for a business to obtain a permanent electricity connection and supply for a standardized warehouse
<i>Registering property</i>	records the full sequence of procedures necessary for a business (the buyer) to purchase a property from another business (the seller) and to transfer the property title to the buyer’s name so that the buyer can use the property for expanding its business
<i>Getting credit</i>	measures the legal rights of borrowers and lenders with respect to secured transactions through one set of indicators and the reporting of credit information through another
<i>Protecting minority investors (till 2014 - Protecting investors)</i>	measures the protection of minority investors from conflicts of interest through one set of indicators and shareholders’ rights in corporate governance through another
<i>Paying taxes</i>	records the taxes and mandatory contributions that a medium-size company must pay in a given year as well as the administrative burden of paying taxes and contributions and complying with post-filing procedures

31 Doing Business 2018. Reforming to Create Job. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB18-Report.pdf> [in English]

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

<b>Indicator</b>	<b>Description</b>
<b>Trading across borders</b>	records the time and cost associated with the logistical process of exporting and importing goods (including the time for preparation of the required documents)
<b>Enforcing contracts</b>	measures the time and cost for resolving a commercial dispute through a local first-instance court and the quality of judicial processes index, evaluating whether each economy has adopted a series of good practices that promote quality and efficiency in the court system
<b>Resolving insolvency (till 2011 – Closing a business)</b>	studies the time, cost and outcome of insolvency proceedings involving domestic entities as well as the strength of the legal framework applicable to judicial liquidation and reorganization proceedings. The data for the resolving insolvency indicators are derived from questionnaire responses by local insolvency practitioners and verified through a study of laws and regulations as well as public information on insolvency systems
<b>Additional</b>	
<b>Labour market regulation</b>	studies the flexibility of regulation of employment, specifically as it relates to the areas of hiring, working hours and redundancy

The analysis of the indicators presented in the reports “Doing Business” (2004-2018)<sup>32</sup> allows highlighting the following limitations in data usage:

- 32 Doing Business 2018. Reforming to Create Job. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB18-Report.pdf> [in English]; Doing Business 2017. Equal Opportunity for All. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2017> [in English]; Doing Business 2016. Measuring Regulatory Quality and Efficiency. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2016> [in English]; Doing Business 2015. Going Beyond Efficiency. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2015> [in English]; Doing Business 2014. Understanding Regulations for Small and Medium-Size Enterprises. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2014> [in English]; Doing Business 2013. Smarter Regulations for Small and Medium-Size Enterprises. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2013> [in English]; Doing Business 2012. Doing Business in a More Transparent World. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2012> [in English]; Doing Business 2011. Making a difference for entrepreneurs. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2011> [in English]; Doing Business 2010. Reforming through difficult times. <http://www.doingbusiness.org>.

1. *Insufficient detail of the data in the 2004-2006 reports.* Thus, in the reports (2004-2005) only data on specific indicators were presented, general indicators were not presented. In the report (2006) only the overall rating and indicators by components of indicators are presented.

2. *Changing of indicators.* The system of indicators used to calculate the general ranking is not permanent; in particular, the titles of three indicators have been changed. The indicator “Employing workers” indicator was used till 2010 and later has been replaced by the additional indicator “Labor Market Regulation”. Since 2012 the indicator “Getting electricity” has been introduced.

3. *There is no complete comparison between the data.* For example, the data for Dealing with Construction Permits, Getting Electricity, Registering Property, Getting Credit, Protecting Minority Investors, Trading across Borders, Enforcing Contracts and Resolving Insolvency are not comparable between Doing Business 2014 and Doing Business 2015 due to methodological changes. The data for Registering Property, Paying Taxes and Enforcing Contracts are not comparable between Doing Business 2015 and Doing Business 2016 due to methodological changes.

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*ingbusiness.org.* Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2010> [in English]; Doing Business 2009. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2009> [in English]; Doing Business 2008. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2008> [in English]; Doing Business 2007. How to reform. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2007> [in English]; Doing Business 2006. Creating jobs. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2006> [in English]; Doing Business 2005. Removing obstacles to growth. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2005> [in English]; Doing Business 2004. Understanding regulations. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2004> [in English].

A detailed description of the changing in the general ranking “Doing Business” and indicator “Paying Taxes” of Ukraine and Georgia is presented in Fig. 1, 2, and in table 2 - changes of all indicators.

According to the report of 2017<sup>33</sup> Ukraine has ranked 80 among 190 countries rated by “Doing Business 2017” (tab. 2) which is one position higher in comparison with the rating of “Doing Business 2016”. According to the “Doing Business 2018”<sup>34</sup> Ukraine ranks 76 among 190 countries. Georgia is now ranked among the top 10 economies in Doing Business. The leader is New Zealand. This country is followed by Singapore, Denmark, South Korea and Hong Kong. These five leaders remain unchanged in reports “Doing Business 2017” and “Doing Business 2018”.

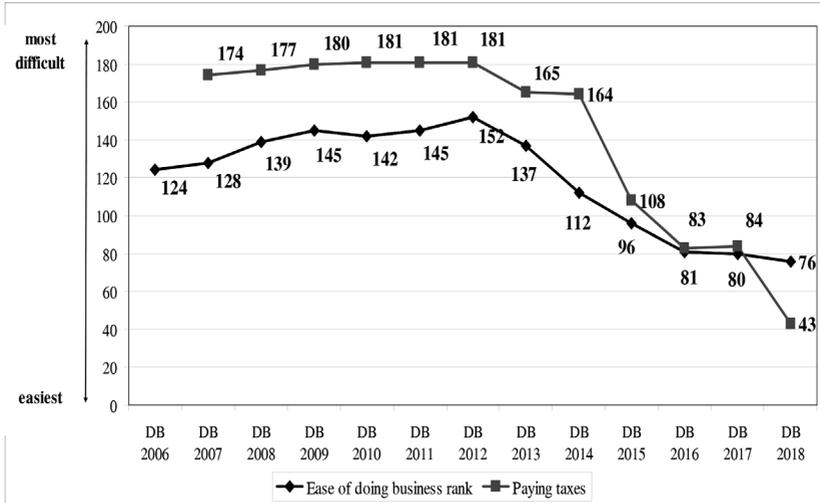
In comparison with 2016 Ukraine improved its positions by the following indicators: starting a business – from 24 to 20; getting electricity – from 140 to 130; protecting minority investors – from 101 to 70; enforcing contracts – from 93 to 81. The report “Doing Business 2017” highlights the reforms made in Ukraine in the spheres of protecting minority investors and enforcing contracts. But there are spheres in which indicators lowered or stayed at the same positions. They are: resolving insolvency – from 148 to 150; trading across borders – from 110 to 115; paying taxes – from 83 to 84; registering property – from 62 to 63; getting credit – from 19 to 20; dealing with construction permits – from 137 to 140.

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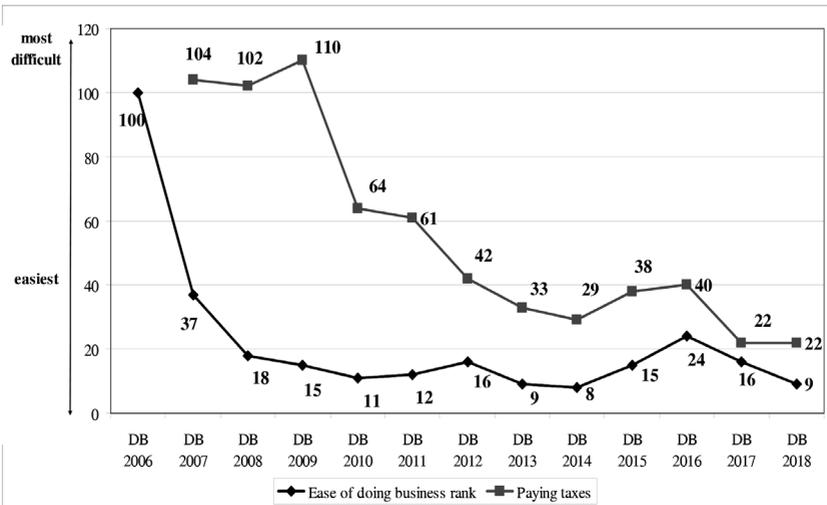
33 Doing Business 2017. Equal Opportunity for All. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2017> [in English]

34 Doing Business 2018. Reforming to Create Job. <http://www.doingbusiness.org>. Retrieved from [http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB18-Report.pdf](http://www.doingbusiness.org/~/media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB18-Report.pdf) [in English]

**CHAPTER 1. HISTORICAL AND SOCIO-ECONOMIC PREREQUISITES FOR THE DEVELOPMENT OF RELATIONS BETWEEN GEORGIA AND UKRAINE**



**Figure 1. Ranks of Ukraine in “Doing Business”**



**Figure 2. Ranks of Georgia in “Doing Business”**

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

**Table 2**

**Ranks of Ukraine and Georgia in “Doing Business”**

Name	Ukraine													
	DB 2006	DB 2007	DB 2008	DB 2009	DB 2010	DB 2011	DB 2012	DB 2013	DB 2014	DB 2015	DB 2016	DB 2017	DB 2018	
<b>Ease of doing business rank</b>	<b>124</b>	<b>128</b>	<b>139</b>	<b>145</b>	<b>142</b>	<b>145</b>	<b>152</b>	<b>137</b>	<b>112</b>	<b>96</b>	<b>81</b>	<b>80</b>	<b>76</b>	
Starting a business	-	101	109	128	134	118	112	50	47	76	24	20	52	
Dealing with licenses	-	107	174	-	-	-	-	-	-	-	-	-	-	
Dealing with construction permits	-	-	-	179	181	179	180	183	41	70	137	140	35	
Employing workers	-	107	102	100	83	-	-	-	-	-	-	-	-	
Getting electricity	-	-	-	-	-	-	169	166	172	185	140	130	128	
Registering property	-	133	138	140	141	164	166	149	97	59	62	63	64	
Getting credit	-	65	68	28	30	32	24	23	13	17	19	20	29	
Protecting investors	-	142	141	142	109	109	111	117	128	-	-	-	-	
Protecting minority investors	-	-	-	-	-	-	-	-	-	109	101	70	81	
<b>Paying taxes</b>	<b>174</b>	<b>177</b>	<b>180</b>	<b>180</b>	<b>181</b>	<b>181</b>	<b>165</b>	<b>165</b>	<b>164</b>	<b>108</b>	<b>83</b>	<b>84</b>	<b>43</b>	
Trading across borders	-	106	120	131	139	139	140	145	148	154	110	115	119	
Enforcing contracts	-	26	46	49	43	43	44	42	45	43	93	81	82	
Closing a business	-	139	140	143	145	150	-	-	-	-	-	-	-	
Resolving insolvency	-	-	-	-	-	-	156	157	162	142	148	150	149	
<b>Georgia</b>														
<b>Ease of doing business rank</b>	<b>100</b>	<b>37</b>	<b>18</b>	<b>15</b>	<b>11</b>	<b>12</b>	<b>16</b>	<b>9</b>	<b>8</b>	<b>15</b>	<b>24</b>	<b>16</b>	<b>9</b>	
Starting a business	-	36	10	4	5	8	7	7	8	5	6	8	4	
Dealing with licenses	-	42	11	-	-	-	-	-	-	-	-	-	-	
Dealing with construction permits	-	-	-	10	7	7	4	3	2	3	11	8	29	
Employing workers	-	6	4	5	9	-	-	-	-	-	-	-	-	
Getting electricity	-	16	11	2	2	2	89	50	54	37	62	39	30	
Registering property	-	48	48	28	30	15	8	4	3	7	7	7	12	
Getting credit	-	135	33	38	41	20	17	19	16	-	-	-	-	
Protecting investors	-	-	-	-	-	-	-	-	-	-	43	20	7	
Protecting minority investors	-	-	-	-	-	-	-	-	-	38	40	22	2	
<b>Paying taxes</b>	<b>104</b>	<b>102</b>	<b>110</b>	<b>110</b>	<b>64</b>	<b>61</b>	<b>42</b>	<b>33</b>	<b>29</b>	<b>33</b>	<b>40</b>	<b>22</b>	<b>62</b>	
Trading across borders	-	95	64	81	30	35	54	38	43	33	78	54	62	
Enforcing contracts	-	32	42	43	41	41	41	30	33	23	13	16	7	
Closing Business	-	86	105	92	95	105	-	-	-	-	-	-	-	
Resolving insolvency	-	-	-	-	-	-	109	81	88	122	101	106	57	

The success on four indicators has allowed for Ukraine to rise in the overall rating. Ukraine has shown the greatest growth in the “dealing with constructing permits”, which moved on to 105 points because Ukraine reduced the cost of construction by significantly lowering mandatory investor contributions to Kyiv’s social and engineering-transport infrastructure.

Also, the rating shows an increase of 41 points in “paying taxes” (Ukraine introduced in 2016 a flat rate of 22% for the Unified Social Contribution Tax paid by employers, which replaced the previous differentiated rates ranging from 36.76% to 49.7%), 2 points (from 130 to 128) - in “getting electricity” and 1 point (from 150 to 149) - in “resolving insolvency”. At the same time Ukraine has fallen 32 points (from 20 to 52) in “starting business”, 11 (from 70 to 81) in “protecting minority investors”, 9 (from 20 to 29) - in “getting credit”, 4 - in “trading across borders” (from 115 to 119) and 1 - in “registering property” (from 63 to 64) and “enforcing contracts” (from 81 to 82).

The reports show that it is necessary to implement reforms of deregulation because Ukraine is considerably behind the neighboring countries: in “Doing Business 2017” Georgia holds the 16<sup>th</sup> place, Poland – the 24<sup>th</sup>, Romania – the 36<sup>th</sup>, Belarus – the 37<sup>th</sup>, Hungary – the 41<sup>st</sup>, Moldova – the 44<sup>th</sup> and Turkey – the 69<sup>th</sup>; in “Doing Business 2018” Georgia holds the 9<sup>th</sup> place, Poland – the 27<sup>th</sup>, Romania – the 45<sup>th</sup>, Belarus – the 38<sup>th</sup>, Hungary – the 48<sup>th</sup>, Moldova – the 44<sup>th</sup> and Turkey – the 60<sup>th</sup>.

The comparison of indicators of Georgia and Ukraine in the rankings of “Doing Business 2017” and “Doing Business 2018” is presented in Table 3.

Georgia is ahead of Ukraine by almost all indicators. Only six indicators in Ukraine had slightly better positioning in Doing Business-2017: (1) cost of starting business (% of income per capital); (2) building quality control index; (3) extent of corporate transparency index; (4) border compliance (cost of export); (5) border compliance (cost of import); (6) strength of insolvency framework index.

STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP

Table 3

**Indicators of Georgia and Ukraine in the ranking of  
“Doing Business – 2017”**

Indicator	Doing Business – 2017			Doing Business – 2018		
	Georgia	Ukraine	Distance	Georgia	Ukraine	Distance
<b>Ease of doing business rank</b>	<b>16</b>	<b>80</b>	<b>+64</b>	<b>9</b>	<b>76</b>	<b>+67</b>
<i>Population</i>	<i>3,679,000</i>	<i>45,198,200</i>	<i>+41,519,200</i>	<i>3,719,300</i>	<i>45,004,645</i>	<i>+41,285,345</i>
<i>GNI per capita (US\$)</i>	<i>4,160</i>	<i>2,620</i>	<i>-1,540</i>	<i>3,810</i>	<i>2,310</i>	<i>-1,500</i>
<b>Starting a business</b>	<b>8</b>	<b>20</b>	<b>+12</b>	<b>4</b>	<b>52</b>	<b>+48</b>
Procedures (number)	3	4	+1	2	6	+4
Time (days)	3	5	+2	2	6.5	+4.5
Cost (% of income per capital)	2.4	0.5	-1.9	2.5	0.8	-1.7
Minimum capital (% of income per capita)	0.0	0.0	0.0	0.0	0.0	0.0
<b>Dealing with construction permits</b>	<b>8</b>	<b>140</b>	<b>+132</b>	<b>29</b>	<b>35</b>	<b>+6</b>
Procedures (number)	7	10	+3	11	10	-1
Time (days)	48	67	+19	63	76	+13
Cost (% of warehouse value)	0.2	15.2	+15	0.3	3.1	+2.8
Building quality control index (0-15)	7.0	8.0	+1	7.0	8.0	+1
<b>Getting electricity</b>	<b>39</b>	<b>130</b>	<b>+91</b>	<b>30</b>	<b>128</b>	<b>+98</b>
Procedures (number)	4	5	+1	3	5	+2
Time (days)	71	281	+210	71	281	+210
Cost (% of income per capital)	354.0	637.6	+283.6	176.8	525.2	+348.4
Reliability of supply and transparency of tariffs index (0-8)	6	6	0	5	6	+1
<b>Registering property</b>	<b>3</b>	<b>63</b>	<b>+60</b>	<b>4</b>	<b>64</b>	<b>+60</b>
Procedures (number)	1	7	+6	1	7	+6
Time (days)	1	23	+22	1	17	+16
Cost (% of property value)	0.0	1.9	+1.9	0.0	1.8	+1.8
Quality of land administration index (0-30)	21.5	15.5	-6	21.5	14.5	-7
<b>Getting credit</b>	<b>7</b>	<b>20</b>	<b>+13</b>	<b>12</b>	<b>29</b>	<b>+17</b>
Strength of legal rights index (0-12)	9	8	-1	9	8	-1
Depth of credit information index (0-8)	8	7	-1	8	7	-1
Credit bureau coverage (% of adults)	88.6	40.0	-48.6	95.7	47.3	-48.4
Credit registry coverage (% of adults)	0.0	0.0	0.0	0.0	0.0	0.0
<b>Protecting minority investors</b>	<b>7</b>	<b>70</b>	<b>+63</b>	<b>2</b>	<b>81</b>	<b>+79</b>

**CHAPTER 1. HISTORICAL AND SOCIO-ECONOMIC PREREQUISITES FOR THE DEVELOPMENT OF RELATIONS BETWEEN GEORGIA AND UKRAINE**

Indicator	Doing Business – 2017			Doing Business – 2018		
	Georgia	Ukraine	Distance	Georgia	Ukraine	Distance
Extent of disclosure index (0-10)	9	6	-3	9	7	-2
Extent of director liability index (0-10)	6	2	-4	6	2	-4
Ease of shareholder suits index (0-10)	8	6	-2	9	6	-3
Extent of shareholder rights index (0-10)	7	6	-1	7	5	-2
Extent of ownership and control index (0-10)	8	5	-3	9	5	-4
Extent of corporate transparency index (0-10)	8	9	+1	9	8	-1
<b>Paying taxes</b>	<b>22</b>	<b>84</b>	<b>+62</b>	<b>22</b>	<b>43</b>	<b>+21</b>
Payments (number per year)	5	5	0	5	5	0
Time (hours per year)	270	355.5	+85.5	269	327.5	+58.5
Total tax rate (% of profit)	16.4	51.9	+35.5	16.4	37.8	+21.4
Post-filing index (0-100)	87.22	79.26	-7.96	85.89	85.95	+0.06
<b>Trading across borders</b>	<b>54</b>	<b>115</b>	<b>+61</b>	<b>62</b>	<b>119</b>	<b>+57</b>
Time to export						
Documentary compliance (hours)	2	96	+94	2	96	+94
Border compliance (hours)	14	26	+12	48	26	-22
Cost to export						
Documentary compliance (US\$)	35	292	+257	35	292	+257
Border compliance (US\$)	383	75	-308	383	75	-308
Time to import						
Documentary compliance (hours)	2	168	+166	2	168	+166
Border compliance (hours)	15	72	+57	15	72	+57
Cost to import						
Documentary compliance (US\$)	189	212	+23	189	212	+23
Border compliance (US\$)	396	100	-296	396	100	-296
<b>Enforcing contracts</b>	<b>16</b>	<b>81</b>	<b>+65</b>	<b>7</b>	<b>82</b>	<b>+75</b>
Time (days)	285	378	+93	285	378	+93
Cost (% of claim)	29.9	46.3	+16.4	25.0	46.3	+21.3
Quality of judicial processes index (0-18)	12.0	9.0	-3	12,5	9.0	-3.5
<b>Resolving insolvency</b>	<b>106</b>	<b>150</b>	<b>+44</b>	<b>57</b>	<b>149</b>	<b>-92</b>
Time (years)	2.0	2.9	+0.9	2.0	2.9	+0.9
Cost (% of estate)	10.0	42.0	+32	10.0	40.5	+30.5
Recovery rate (cents on the dollar)	39.5	7.5	-32	39.4	8.9	-30.5
Strength of insolvency framework index (0-16)	6.0	7.5	+1.5	11.0	7.5	-3.5

In “Doing Business 2018” eight indicators of Ukraine have better positioning: (1) cost of starting business (% of income per capital); (2) number of procedures in dealing with construction permits; (3) building quality control index; (4) reliability of supply and transparency of tariffs index; (5) post-filing index; (6) border compliance (time to export); (7) border compliance (cost of export); (8) border compliance (cost of import).

On four indicators Georgia and Ukraine have equal positions: (1) minimum capital of starting business (% of income per capital); (2) credit registry coverage (% of adults); (3) payments of taxes (number per year).

In Summaries of Doing Business Reforms which are presented in reports “Doing Business” all measures classifies in two groups: (1) reform making it easier to do business; (2) change making it more difficult to do business.

Only in the reports of 2012 and 2009 Ukraine was noted as having introduced reforms and changes making it more difficult to do business. In 2009 such reforms were identified in the sphere of “dealing with construction permits” (increase of the cost and number of permits). In 2012 such reforms were identified in the sphere of “trading across borders” (introduction of additional inspections). Georgia has never been included in the list of countries that by their reforms making it more difficult to do business.

For Ukraine and Georgia in reports “Doing Business 2017” and “Doing Business 2018” reforms only of the first group have been identified, and this characterizes both countries positively. In 2017 for Georgia such reforms have been identified in five spheres, and for Ukraine - only in two spheres, in 2018 such reforms identified in three spheres for both countries (table 4).

In each report, beginning from 2008, 10 countries are allocated as the most improved environment for the development of the business. Ukraine was noted in report “Doing Business 2014” – the 1st place, report “Doing Business 2013” – the 3rd place. Georgia was included in such a list in the reports “Doing Business-2017” and “Doing Business-2008”. Georgia belongs to the group of the 10 economies showing the most notable improvement in performance on the Doing Business indicators of 2017.

Table 4

Georgia and Ukraine in Summaries of Doing Business Reforms

Ukraine	Georgia
<b>in 2015/2016 according to “Doing Business – 2017”</b>	
<p><b>Protecting minority investors</b> Ukraine strengthened minority investor protections by requiring interested director or shareholder to be excluded from the vote, by requiring that proposed related-party transactions undergo external review, by introducing remedies in cases where related party transactions are harmful to the company and also clarifying ownership and control structures.</p> <p><b>Enforcing contracts</b> Ukraine made enforcing contracts easier by introducing a system that allows users to pay court fees electronically.</p>	<p><b>Getting electricity</b> Georgia improved the reliability of electricity supply by introducing penalties for the utility for having worse scores on the annual system average interruption duration index (SAIDI) and system average interruption frequency index (SAIFI) than the previous year. Georgia also mandated the notification of customers by the utility of planned electricity outages.</p> <p><b>Registering property</b> Georgia improved the quality of land administration by increasing coverage of all maps for privately held land plots in the main business city.</p> <p><b>Protecting minority investors</b> Georgia strengthened minority investor protections by increasing shareholder rights and role in major corporate decisions and by clarifying ownership and control structures.</p> <p><b>Trading across borders</b> Georgia made export and import documentary compliance faster by improving its electronic document processing system. It also introduced an advanced electronic document submission option.</p> <p><b>Paying taxes</b> Georgia made paying taxes easier by abolishing additional annex to corporate income tax returns and by improving the efficiency of the online system used for filing VAT returns.</p>
<b>in 2016/2017 according to “Doing Business – 2018”</b>	
<p><b>Dealing with construction permits</b> Ukraine made dealing with construction permits easier by reducing fees.</p> <p><b>Protecting minority investors</b> Ukraine strengthened minority investors protections by requiring detailed immediate public disclosure of related party transactions.</p> <p><b>Paying taxes</b> Ukraine made paying taxes easier by reducing the rate for the unified social contribution tax.</p>	<p><b>Getting electricity</b> Georgia made getting electricity more affordable by reducing connection costs for new customers.</p> <p><b>Protecting minority investors</b> Georgia strengthened minority investor protections by making it easier to sue directors in cases of prejudicial transactions between interested parties, by increasing shareholder rights and role in major corporate decisions and clarifying ownership and control structures.</p> <p><b>Resolving insolvency</b> Georgia made resolving insolvency easier by making insolvency proceedings more accessible for debtors and creditors, improving provisions on treatment of contracts during insolvency and granting creditors greater participation in important decisions during the proceedings.</p>

Georgia increased the reliability of the electricity supply by starting to penalize utilities for having poor power outage indicators, also strengthened minority investor protections by increasing shareholder rights in major decisions, clarifying ownership and control structures and requiring greater corporate transparency. Georgia made import and export documentary compliance faster by improving its electronic document processing system.

In the reports “Doing Business” Ukraine and Georgia are in the group of countries “Europe & Central Asia” which covers 24 countries (Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Georgia, Kazakhstan, Kosovo, Kyrgyz Republic, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Romania, Russian Federation, San Marino, Serbia, Tajikistan, Turkey, Ukraine, Uzbekistan). The indicators of the countries with this mini-ranking are presented in Fig. 3 and Fig. 4.

In 2017 Georgia has ranked the 3<sup>rd</sup> among the countries of Europe & Central Asia giving upper places only to Macedonia & Latvia. Ukraine holds the 22<sup>nd</sup> place being ahead only of Bosnia and Herzegovina, Uzbekistan and Tajikistan. Over 10 indicators position Georgia in the top five. Only by two indicators (resolving insolvency and trading across borders) Georgia holds the lowest position. Ukraine, by contrast, only by two indicators (starting a business and getting credit) holds high positions.

The most reformed Doing Business areas in Europe and Central Asia are starting a business, paying taxes and getting credit. Georgia (among such countries as Macedonia, Kazakhstan, Belarus, Armenia, and the Russian Federation) have made the most reforms in Europe and Central Asia, implementing over 30 reforms each since 2004. Moreover, seven countries in the region (Armenia, Belarus, Georgia, Kazakhstan, Lithuania, and Macedonia) and among them Ukraine - reformed across all Doing Business indicators.

Georgia currently holds the 1st place (the 3<sup>rd</sup> place - in the report of 2017). For 2 indicators Georgia occupies the 1st place, for 3 indicators - the 2nd place, for 1 indicator - the 3<sup>rd</sup> place, for 2 indicators - the 5th place.

CHAPTER 1. HISTORICAL AND SOCIO-ECONOMIC PREREQUISITES FOR THE DEVELOPMENT OF RELATIONS BETWEEN GEORGIA AND UKRAINE

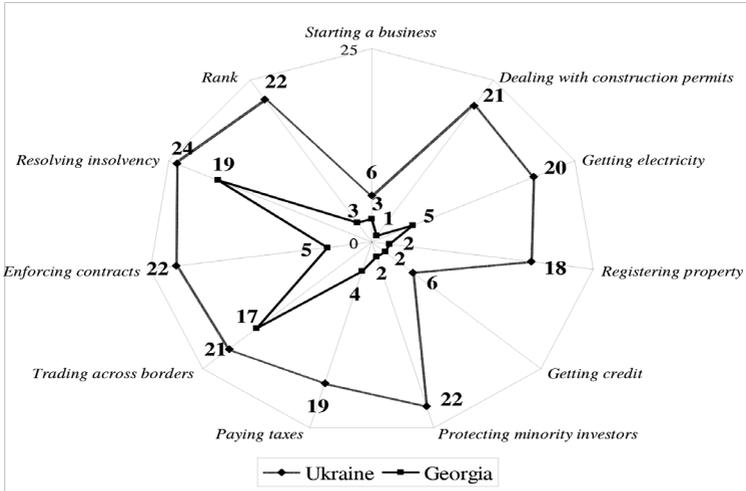


Figure 3. Ranking "Doing Business 2017" of Ukraine and Georgia among Europe & Central Asia countries (24 countries)

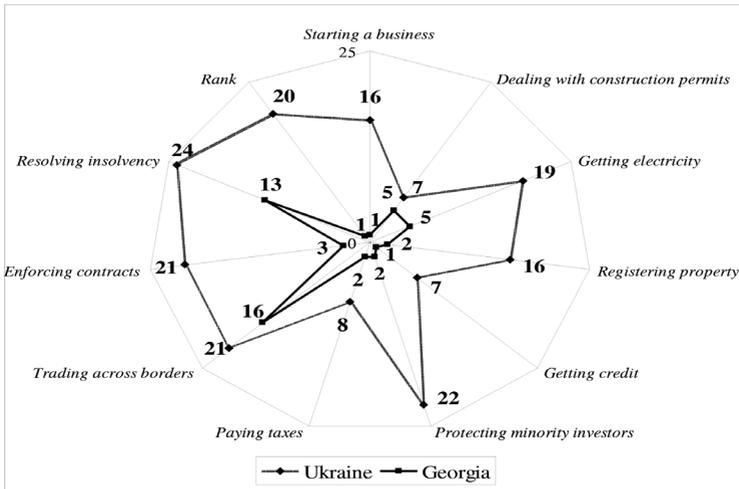


Figure 4. Ranking "Doing Business 2018" of Ukraine and Georgia among Europe & Central Asia countries (24 countries)

For eight indicators Georgia is in the top five. Only two indicators (“resolving insolvency” and “trading across borders”) are Georgia’s low positions (accordingly 13th and 16th places). On the contrary, Ukraine, on the basis of only three indicators (“dealing with construction permits”, “getting credit”, “paying taxes”), holds high positions – the 7th and 8th places, but not in the group of top five leaders.

Rating of “Paying Taxes” evaluates tax burden of an average enterprise in terms of administration and payment of corporate income tax, social contributions, taxes withheld from the income of employees, property taxes, taxes on transfer of property, taxes on dividends and other obligatory payments which have to be paid by business. In addition, the analysis is made on the information on the frequency of submission of tax returns and payment of taxes, as well as the time required to perform tax obligations by business. The ranking also includes the assessment of the processes that follow tax payments, in particular tax audits, receiving budgetary claims, administrative appeals. Such complex of indicators allows making a detailed analysis of tax systems. The indicator “Paying Taxes” is evaluated by the following parameters (table 5).

**Table 5**

**Indicators of “Paying Taxes”**

<b>Indicator</b>	<b>Description</b>
<i>the number of payments</i>	measures the frequency with which the company has to file and pay different types of taxes and contributions, adjusted for the manner in which those filings and payments are made
<i>total tax rate</i>	the measure of tax cost, the total of all taxes borne as a percentage of commercial profit
<i>the time to comply with the three main taxes</i>	three main taxes include corporate income taxes, labour taxes and mandatory contributions, and consumption taxes; time captures the time required to prepare, file and pay each tax type;
<i>post-filing index</i>	<ul style="list-style-type: none"> <li>• based on four equally weighted components:               <ol style="list-style-type: none"> <li>1) time to comply with a VAT refund (hours);</li> <li>2) time to obtain a VAT refund (weeks);</li> <li>3) time to comply with a CIT audit (hours);</li> <li>4) time to complete a CIT audit (weeks)</li> </ol> </li> </ul>

**CHAPTER 1. HISTORICAL AND SOCIO-ECONOMIC PREREQUISITES FOR THE  
DEVELOPMENT OF RELATIONS BETWEEN GEORGIA AND UKRAINE**

Based on the report “Paying Taxes 2017”<sup>35</sup> and “Paying Taxes 2018”<sup>36</sup> the comparison of Ukraine and Georgia with other countries and groups of countries (table 6) shows that Ukraine and Georgia has favourable conditions by such indicators as “Number of tax payments” and “Post-filing index” but too much time for calculation and payment of taxes and a relatively high overall tax rate.

**Table 6**

**Comparison of the indicators of Ukraine and Georgia by the indicator  
“Paying Taxes” with other countries and group of countries**

Indicator	Ukraine	Georgia	Europe and Central Asia (24 coun- tries)	OECD high in- come (32 coun- tries)	New Zealand	Poland
<b>“Paying Taxes - 2017”</b>						
<b>Rank among all countries</b>	<b>84</b>	<b>22</b>	-	-	<b>11</b>	<b>47</b>
Number of tax payments	5.0	5.0	17.6	10.9	7.0	7.0
Time for calculation and tax payments	355.5	270.0	221.5	163.4	152.0	271.0
Overall tax rate (% of income before taxation)	51.9	16.4	33.8	40.9	34.3	40.4
Post-filing index (0-100)	79.3	87.2	71.9	85.1	96.9	92.2
<b>“Paying Taxes - 2018”</b>						
<b>Rank among all countries</b>	<b>43</b>	<b>22</b>	<b>51</b>	-	-	<b>9</b>
Number of tax payments	5	5	7	16.5	10.9	7
Time for calculation and tax payments	328	269	260	218.4	160.7	140
Overall tax rate (% of income before taxation)	37.8	16.40	40.5	33.1	40.1	40.1
Post-filing index (0-100)	85.95	85.89	77.36	65.20	83.45	96.90

As noted in the report “Paying Taxes 2017” average companies in the world spend 251 hours on tax calculation, preparation of reports and pay-

35 Paying Taxes 2017. <http://pwc.com>. Retrieved from <http://pwc.com/gx/en/paying-taxes/pdf/pwc-paying-taxes-2017.pdf> [in English].

36 Paying Taxes 2018. <http://pwc.com>. Retrieved from <http://pwc.com/gx/en/paying-taxes/pdf/pwc-paying-taxes-2018.pdf> [in English].

ments, perform 25 payments at an average total tax rate of 40.6% of income before taxation. As noted in the report “Paying Taxes 2018” average companies in the world spend 240 hours on tax calculation, preparation of reports and payments, perform 24 payments at an average total tax rate of 40.5% of income before taxation.

Indicators of mini-ranking of the EU countries in 2017 are: (1) general tax rate: from 20.8% (Luxembourg) to 62.8% (France); (2) time for calculation and payment of taxes: from 52 hours. (San Marino) to 453 (Bulgaria) (Bulgaria is far ahead of other EU countries; Hungary in ahead of it with the figure of 277 hours); (3) number of payments: 4 (Norway) to 31 (Croatia); (4) index of procedures after reporting: from 48.4 (Italy) to 98.6 (San Marino). Indicators of mini-ranking of the EU countries in 2018 are: (1) general tax rate: from 20.5% (Luxembourg) to 62.2% (France); (2) time for calculation and payment of taxes: from 50 hours (Estonia) to 453 (Bulgaria) (Bulgaria is far ahead of other EU countries; Hungary in ahead of it with the figure of 277 hours); (3) number of payments: 4 (Norway) to 35 (Croatia); (4) index of procedures after reporting: from 52.4 (Italy) to 99.4 (Estonia).

In the report of “Paying Taxes 2017” Ukraine and Georgia are analyzed in the group “Central Asia & Eastern Europe” in comparison with 19 countries (not 24 as in Doing Business): Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Israel, Kazakhstan, Kosovo, Kyrgyz Republic, Macedonia, Moldova, Montenegro, Russian Federation, Serbia, Tajikistan, Turkey, Ukraine, and Uzbekistan.

Among these countries Ukraine and Georgia has the lowest number of tax payments which is 5. Other countries have more payments: from 6 (Azerbaijan) to 51 (Kyrgyzstan). In 2017 the total tax rate in Ukraine was one of the highest which is 51.9% (ahead of Ukraine only Belarus – 54.8% and Tajikistan – 65.2%). In 2018 the general tax rate of Ukraine (37.8%) corresponds to the average, the lowest in Macedonia - 13.0%, the highest in Tajikistan - 65.2%. In Georgia, the total tax rate is 16.4%. Index of calcula-

**CHAPTER 1. HISTORICAL AND SOCIO-ECONOMIC PREREQUISITES FOR THE DEVELOPMENT OF RELATIONS BETWEEN GEORGIA AND UKRAINE**

tion of taxes is one of the highest in Ukraine and equals 355.5 hours in 2017 and 328 hours in 2018 (the index are higher only in Bosnia and Herzegovina – 411 hours), the smallest indicator in Macedonia - 119 hours. But this index (269-270 hours) is also high in Georgia. Ukraine substantially improved its position post-filing index: in the report of 2018 - 3rd place, ahead even of Georgia (table 7).

**Table 7**

**Components of Post-filing index of the countries of Central Asia& Eastern Europe (19 countries)**

<b>Indicator</b>	<b>Ukraine</b>	<b>Georgia</b>	<b>Easiest</b>	<b>Most difficult</b>
<b>"Paying Taxes - 2017"</b>				
<i>Post-filing index</i>	<b>Ukraine</b>	<b>Georgia</b>	<b>Serbia</b>	<b>Turkey</b>
	79.3	87.2	94.0	3.9
<b>Components:</b>				
1. VAT compliance time (hours)	16.0	20.5	4.0	No refund
2. VAT waiting time (weeks)	28.2	8.5	8.2	No refund
3. CIT audit compliance time (hours)	3.0	1.5	5.0	47.5
4. CIT audit completion time (weeks).	0.0	0.0	0.0	32.1
<b>"Paying Taxes - 2018"</b>				
<i>Post-filing index</i>	<b>Ukraine</b>	<b>Georgia</b>	<b>Serbia</b>	<b>Kyrgyz Republic</b>
	85.95	85.89	91.1	3.9
<b>Components:</b>				
1. VAT compliance time (hours)	16.0	21,5	4,0	No refund
2. VAT waiting time (weeks)	14.3	10,2	14,7	No refund
3. CIT audit compliance time (hours)	3.0	1,0	4,5	20,0
4. CIT audit completion time (weeks).	Audit likelihood < 25%	Audit likelihood < 25%	Audit likelihood < 25%	5,3

If the assessment of an economy of “Paying Taxes” indicator increased or decreased by 2% or more to the extreme limit, the changes in tax legisla-

tion that led to it can be qualified as a reform. Moreover, these reforms fall into two categories: reforms that simplify business and reforms that complicate business. Since 2004 there have been 443 reforms in the tax area in the world. The reforms were aimed at doing business easier.

The positive indicators should be considered critically. In 2010 Ukraine was on the 181 position in the ranking “Paying Taxes”, and it was almost the worst among the countries of the world.

The main negative factors that determined the low competitive position of the Ukrainian tax system were:

- instability, internal contradictions and inconsistencies in tax legislation;
- high tax burden on business;
- misallocation of tax burden among factors of production;
- complexity of tax administration;
- indiscriminate and unjustified tax privileges and exemptions which increase the tax burden on efficient companies that honestly pay taxes<sup>37</sup>.

In 2015 Ukraine held the 108<sup>th</sup> position. This increase was due to the reforms in the tax sphere, adoption of the Tax Code and its reforming in 2015. The most significant improvements include the following:

- introduction of potentially effective set of tax incentives and stimuli for business support;
- establishment of the mechanism for automatic reimbursement of VAT;
- building up tax service centers that will provide a more comfortable environment for taxpayers;

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37 Pokryshka, D., Zhalilo, Ya., Liapin, D., Belinsky, Ya., Moldovan, O., & Skyba, M. (2010). *Mechanisms of development of entrepreneurship in the conditions of post-crisis recovery of economy of Ukraine*. Kyiv: NISD <http://www.niss.gov.ua>. Retrieved from [http://www.niss.gov.ua/content/articles/files/pokryshka\\_m\\_r-47e13.pdf](http://www.niss.gov.ua/content/articles/files/pokryshka_m_r-47e13.pdf) [in Ukrainian].

- formation of electronic channels of communication with taxpayers;
- reducing the number of regulatory organizations;
- reducing social security payments and reduction of the amount of reporting<sup>38</sup>.

In the report “Doing Business-2018” Ukraine is noted twice: as the country that reduced the overall tax rate and as the country, which simplified the procedures after reporting and tax calculation. But we must to consider the existence of a significant period of time between the reforms and their impact on the indicators and the overall rating. So in 2016 in our country the rate of the single social contribution was reduced to 22%, which replaced differentiated rates of 36.76% – 49.7%. But this reduction was taken into account only in the report “Doing Business-2018”. And in this report our country was marked as having introduced the greatest reduction of the general tax rate.

Improvement of the tax policy and development of tax environment should be conducted in the following areas:

- improvement of consumption taxes; improvement of taxation system for legal entities; use of the experience of personal income tax of foreign countries in Ukraine; improvement of the tax benefits system<sup>39</sup>;
- reducing the number of social security payments and reduction of the amount of reporting; bringing to order the system of refunding VAT; introduction of the institution of a consolidated group of tax-

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38 Moldovan, O. (2014). Creation of a Favorable Fiscal Climate for Business Activities in the Ukraine: Main Problems and Ways of Overcoming. *Economic Bulletin of Donbas*, №2(36). 98-104. Retrieved from <http://dspace.nbu.gov.ua/bitstream/handle/123456789/88584/14-Moldovan.pdf?sequence=1> [in Ukrainian].

39 Pedchenko, N., & Strilets, V. (2015). Implementation of foreign experience of tax policy in Ukraine. *Scientific Bulletin of Poltava University of Economics and Trade. Series: Economics*, 1 (69), 1, 179-187. Retrieve from [http://nbuv.gov.ua/UJRN/Nv-pusk\\_2015\\_1\(1\)\\_27](http://nbuv.gov.ua/UJRN/Nv-pusk_2015_1(1)_27). [in Ukrainian].

payers; simplification of tax reporting and accounting for certain taxes; return to the previous mechanism for calculating income tax which was based on the actual rates of profit; improving information technology of communication between payers and regulatory organizations and expand “on-line” services<sup>40</sup>.

According to the average estimates of experts of the World Bank one point in the ranking of “Doing Business” brings the country about 500-600 million US Dollars of investments. In order to improve business climate in Ukraine and Ukraine’s position in the ranking of Doing Business, the Ministry of Economic Development together with the Better Regulation Delivery Office developed a roadmap which consists of 43 issues. The roadmap was approved by the Cabinet of Ministers of Ukraine №1406 on December 16, 2015<sup>41</sup>.

The further increasing of the ranking of Ukraine and Georgia in the world economy in general and in different areas in particular (trade, financial, social, etc.) is impossible without forming a solid basis for internal development which is provided by the taxation system. Despite some positive changes Ukraine and Georgia has the potential to improve institutional, administrative and economic instruments in this sphere. However, it is important to avoid activities that “artificially” increase the ranking of the country without real improvement in the area as this may adversely affect the image and reputation of the country causing distrust of the governance and regulation.

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40 Moldovan, O. (2014). Creation of a Favorable Fiscal Climate for Business Activities in the Ukraine: Main Problems and Ways of Overcoming. *Economic Bulletin of Donbas*, №2(36). 98-104. Retrieved from <http://dspace.nbuv.gov.ua/bitstream/handle/123456789/88584/14-Moldovan.pdf?sequence=1> [in Ukrainian].

41 Order of Cabinet of Ministers of Ukraine “On approval of an action plan for the implementation of best practices and effective quality control, reflected in the World Bank Group methodology for ranking” Doing Business “for 2016” of December 16, 2015. <http://zakon5.rada.gov.ua>. Retrieved from <http://zakon5.rada.gov.ua/laws/show/1406-2015-p> [in Ukrainian].

## REFERENCES

1. Doing Business 2004. Understanding regulations. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2004* [in English].
2. Doing Business 2005. Removing obstacles to growth. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2005* [in English]
3. Doing Business 2006. Creating jobs. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2006* [in English]
4. Doing Business 2007. How to reform. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2007* [in English]
5. Doing Business 2008. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2008* [in English]
6. Doing Business 2009. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2009* [in English]
7. Doing Business 2010. Reforming through difficult times. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2010* [in English]
8. Doing Business 2011. Making a difference for entrepreneurs. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2011* [in English]
9. Doing Business 2012. Doing Business in a More Transparent World. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2012* [in English]
10. Doing Business 2013. Smarter Regulations for Small and Medium-Size Enterprises. *http://www.doingbusiness.org*. Retrieved from *http://www.doingbusiness.org/reports/global-reports/doing-business-2013* [in English]

11. Doing Business 2014. Understanding Regulations for Small and Medium-Size Enterprises. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2014> [in English]
12. Doing Business 2015. Going Beyond Efficiency. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2015> [in English]
13. Doing Business 2016. Measuring Regulatory Quality and Efficiency. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2016> [in English]
14. Doing Business 2017. Equal Opportunity for All. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/reports/global-reports/doing-business-2017> [in English]
15. Doing Business 2018. Reforming to Create Job. <http://www.doingbusiness.org>. Retrieved from <http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB18-Report.pdf> [in English]
16. **Moldovan, O.** (2014). Creation of a Favorable Fiscal Climate for Business Activities in the Ukraine: Main Problems and Ways of Overcoming. *Economic Bulletin of Donbas, №2(36). 98-104*. Retrieved from <http://dspace.nbu.gov.ua/bitstream/handle/123456789/88584/14-Moldovan.pdf?sequence=1> [in Ukrainian].
17. Order of Cabinet of Ministers of Ukraine “On approval of an action plan for the implementation of best practices and effective quality control, reflected in the World Bank Group methodology for ranking” Doing Business “for 2016” of December 16, 2015. <http://zakon5.rada.gov.ua>. Retrieved from <http://zakon5.rada.gov.ua/laws/show/1406-2015-p> [in Ukrainian].
18. Paying Taxes 2017. <http://pwc.com>. Retrieved from <http://pwc.com/gx/en/paying-taxes/pdf/pwc-paying-taxes-2017.pdf> [in English].
19. Paying Taxes 2018. <http://pwc.com>. Retrieved from <http://pwc.com/gx/en/paying-taxes/pdf/pwc-paying-taxes-2018.pdf> [in English].
20. **Pedchenko, N., & Strilets, V.** (2015). Implementation of foreign experience of tax policy in Ukraine. *Scientific Bulletin of Poltava University of Economics and Trade*.

*Series: Economics, 1 (69), 1, 179-187.* Retrieve from [http://nbuv.gov.ua/UJRN/Nv-pusk\\_2015\\_1\(1\)\\_27](http://nbuv.gov.ua/UJRN/Nv-pusk_2015_1(1)_27). [in Ukrainian].

21. Pokryshka, D., Zhalilo, Ya., Liapin, D., Belinsky, Ya., Moldovan, O., & Skyba, M. (2010). *Mechanisms of development of entrepreneurship in the conditions of post-crisis recovery of economy of Ukraine*. Kyiv: NISD <http://www.niss.gov.ua>. Retrieved from [http://www.niss.gov.ua/content/articles/files/pokryshka\\_m\\_r-47e13.pdf](http://www.niss.gov.ua/content/articles/files/pokryshka_m_r-47e13.pdf) [in Ukrainian].

### 1.3. PROBLEMS OF INVESTMENT MAINTENANCE OF AGRICULTURAL ENTERPRISES AND THE WAYS OF ITS SOLUTIONS

Long-competitive development in agro-industrial complex of Ukraine in modern conditions depends on appropriate investment maintenance, the essence of which is to create the favorable conditions for functioning modern enterprises of processing and transport industries. The increasing complexity of modern agricultural sector of Ukraine, accompanied by a crisis shocks and instability of economic development, increases the need for stabilization measures aimed on restoring a dynamic overall economic equilibrium. In these circumstances, the transition from a model of simple export of raw materials to the formation an added value in Ukrainian territory, thus creating new jobs in manufacturing, is an important factor in post-crisis development of agro-industrial complex of Ukraine, which actualizes the depth study of these areas and mechanisms of its development.

We believe that the investment maintenance of increasing of the competitiveness of agricultural enterprises, are able to provide not only the production but also the processing of raw materials in Ukraine becomes an important meaning for modern agrarian relations in Ukraine.

The theoretical bases of competitiveness were formed in the works of such famous foreign scholars as: G. Veysbrod, P. Krugman, M. Porter, T. Richardson.

Practical aspects and problems of relevance of improving the competitiveness of agricultural enterprises widely covered in the works of Ukrainian scientists such as: V. Bazilevich, D. Bayura, V. Geyets, V. Gura, L. Moldavan, V. Pashaver, P. Sabluk, Y. Susidenko and others.

Theoretical and methodological issues of the nature and the role of competitiveness in agricultural sector are widely covered in the works of Polish scientists like: M. Wasiliewski, S. Zabolotnyy.

However, in despite of the strength and solidity of scientific development, not illuminated remain priority aspects related to the study of investment maintenance of increasing the competitiveness of agricultural enterprises.

The aim of the study is to examine the competitive advantages of agricultural sector for investment and develop proposals for areas of investment attractiveness of agro-industrial complex of Ukraine.

The methodological and theoretical basis of the study is scientific works of Ukrainian and foreign scholars on issues of competitiveness. After achievement this goal on the paper was used the system of general and special methods. The paper uses the techniques of abstract logical method, namely, analysis and synthesis, induction and deduction, analogy and comparison. In order to assess the investment attractiveness and competitiveness of agriculture of Ukraine were applied statistical, graphical and tabular of display methods.

The current stage of development of agriculture of Ukraine is characterized by the fact that in agriculture of Ukraine in recent years is produced about 3–4% of the world production of cereals (Table 1). Since 2000 in ag-

riculture of Ukraine were produced 16-18% of GDP, and from 2012 to 2014 were produced 8-10% of GDP. Despite these figures, domestic agriculture is far below its potential.

Table 1.

**Changes in main Production countries, 2015/2016 MY<sup>42</sup>**

Country	Changes up/down by, thd. mt	Changes up/down to, thd. mt
USA	-8,385 (-1.93%)	423,996
China	+13,146 (+3.77%)	361,500
European Union	-19,076 (-5.83%)	308,093
India	-9,781 (-7.09%)	128,040
Russian Federation	+34 (+0.03%)	99,500
Ukraine	-4,270 (-6.66%)	59,825

As we see in 2015/16 marketing year (MY) Ukraine produced 2.99% of the world grain production or 59 825 thousand of metric tons (MT) of cereals in this season.

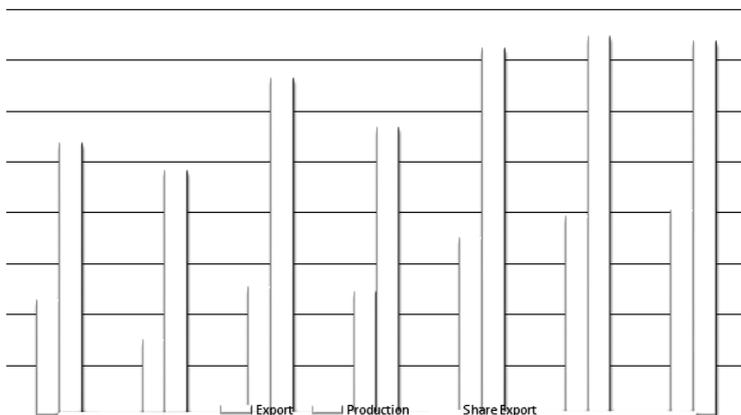
Ukraine Agricultural lands occupy 42 million hectares, or 70% of the total of the country's largest crop area, which make mostly grain crops, especially winter wheat. Ukraine is one of the first places in the world in the area of agricultural land. Ukraine is a strategic partner for Europe, Asia and the Middle East because of competitive advantages such as:

- a favorable geographical location on the crossing of the trading routes between Russia, Near East and Western Europe;
- the largest bank of arable land in Europe (around 33 million hectares), which represents 12% of arable land in Europe, and 2.2% of arable land in the world;
- one-third of black earth in the world.

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42 The site of the State Statistics Service of Ukraine. [Electronic resource] / State Statistics Service of Ukraine. – Electronic data. – K: State Statistics Service of Ukraine, 2013. - Access: <http://ukrstat.gov.ua/>

At the present stage of development of agrarian relations Ukraine is one of the leading manufacturers and exporters of grains, oilseeds, pulses, sunflower oil and soybean oil in the world (Fig. 1).



*Fig.1. Ukraine's grains and oilseeds production and export<sup>43</sup>*

As we see, the domestic production of grains and oilseeds is constantly growing in the last three years. According to the Ministry of Agrarian Policy and Food of Ukraine grain exports in 2015/2016 season should reach 36 million tons.

Ukraine is among the world leaders in production of sunflower, corn, wheat, barley (Table 2).

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43 The site of the State Statistics Service of Ukraine. [Electronic resource] / State Statistics Service of Ukraine. – Electronic data. – K: State Statistics Service of Ukraine, 2013. - Access: <http://ukrstat.gov.ua/>

Table 2.

Ukraine's world ranking in agricultural production<sup>44</sup>

<i>Grain crops</i>	<i>Ranking</i>	<i>Grain crops</i>	<i>Ranking</i>
Sunflower oil	1	Wheat	6
Corn	3	Soybean	6
Barley	4	Poultry	7

The main competitors in the production of sunflower seeds, corn and wheat are USA, Russia, Brazil and Argentina.

Table 3.

Production of grain crops in ukraine, mmt<sup>45</sup>

<b>Culture</b>	<b>2012/2013 year</b>	<b>2013/2014 year</b>	<b>2014/2015 year</b>	<b>2015/2016 year</b>
<b>Wheat</b>	15,7	21,9	24,1	27,3
<b>Corn</b>	20,9	30,8	28,5	22,8
<b>Barley</b>	6,9	7,3	9,0	8,2
<b>Total</b>	43,5	60	61,6	57,9

As you can see, wheat production in Ukraine this season has increased to 27,282 mln. tons, up 3,182 mln. tons more than the previous season, while grain exports from the country could be expected at 12.7 mln. tons, up 0, 7 mln. tons more than in the previous forecast and 1.5 million tons more than actual exports of the previous season.

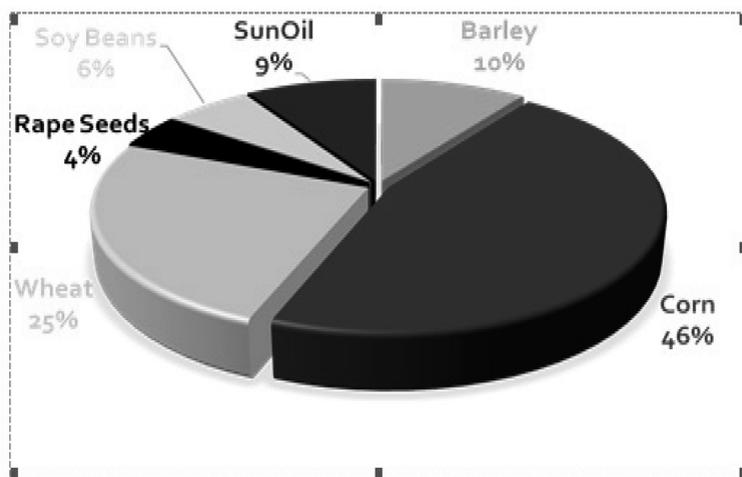
44 The site of Ministry of Agrarian Policy and Food of Ukraine. [Electronic resource] / Ministry of Agrarian Policy and Food of Ukraine. – Electronic data. – M.: Ministry of Agrarian Policy and Food of Ukraine, 2012. – Access: <http://minagro.gov.ua>

45 Agriculture of Ukraine; for the 2014 / State Statistics Service of Ukraine // Statistical Bulletin. - K.: State Statistics Service, 2014 - 384p.; The site of the State Statistics Service of Ukraine. [Electronic resource] / State Statistics Service of Ukraine. – Electronic data. – K.: State Statistics Service of Ukraine, 2013. – Access: <http://ukrstat.gov.ua/>

Corn harvest in Ukraine has reached 22,815 mln. tons, which 5.685 million tons less than the actual amount of the previous season, and the forecast corn exports from Ukraine remained at the same level 16.5 mln. tons, which is 2.4 mln. tons less than actual exports last year.

Ukrainian corn is the main candidate for the drought in Africa and Asia. Only in October-November 2015 Ukraine sold 10,000 tons in Senegal and 7,000 MT in Cameroon. Our country has the highest quality products and the amount needed to meet the world's needs.

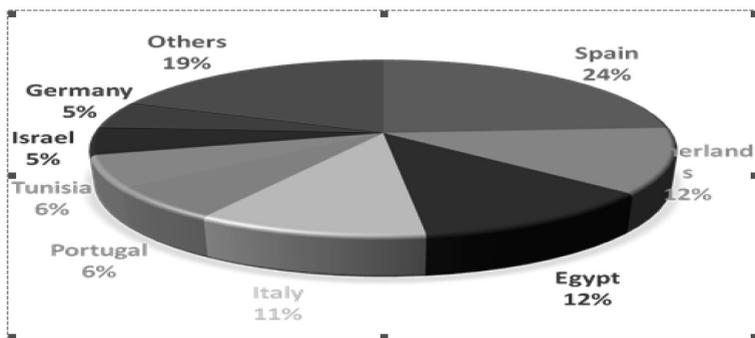
Exports of barley rose to 4.0 mln. tons this year, unlike the previous season (3.6 mln.). According to the Ministry of Agrarian Policy and Food of Ukraine, our country has exported about 23.926 million tons of grain on the period of 26.01.2016 (Fig. 2, 3)<sup>46</sup>.



*Fig.2. Crop export structure from ukraine, 2015/2016*

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46 The site of Ministry of Agrarian Policy and Food of Ukraine. [Electronic resource] / Ministry of Agrarian Policy and Food of Ukraine. – Electronic data. – M.: Ministry of Agrarian Policy and Food of Ukraine, 2012. – Access: <http://minagro.gov.ua>



*Fig.3. Main export destinations 2015/2016 crop*

Ukraine always fulfills quota's of EU for delivery of grains. Quality is 100% conforms to EU standards and requirements. EU continues to be at the first place in terms of food supplies from Ukraine. In accordance with the information of Ukrainian Agrarian Confederation Ukrainian exporters fully used the quota for exports to EU of certain types of products till April 22, 2016 (Table. 4, 5).

By the principle of "import license AGRIM" already fully fulfilled quotas for export on such products:

- corn (400 thousand tons);
- quarterly quota for the supply of poultry meat;
- 98% of the quota used for the supply of wheat (total – 950 thousand tons);
- 90% the quota used for the supply of barley (total – 250 thousand tons).

**Table 4.**

**Fulfilled quotas of export from Ukraine to EU<sup>47</sup>**

Name of product	Volume of quotas, tons	Deadline for Quota
Honey	5 000	04.01.2016
Grape and apple juices	10 000	03.02.2016
Sugar	20 070	17.02.2016
Processed tomatoes	10 000	16.03.2016
Barley groats and meal; grain cereals, processed in ways	6 300	29.02.2016
Oats	4 000	11.04.2016

**Table 5.**

**Partially are fulfilled quotas of export from Ukraine to EU<sup>48</sup>**

<i>Name of product</i>	<i>Volume of quotas, tons</i>	<i>Deadline for Quota</i>
<b>Other sugars</b>	10 000	1 204
<b>Wheat malt and gluten</b>	7 000	556
<b>Starch</b>	10 000	575
<b>Bran, waste, residues</b>	17 000	13 336
<b>Sweet corn</b>	1 500	244
<b>Waste products from the sugar</b>	2 000	135
<b>Food products</b>	2 000	135
<b>Ethanol</b>	27 000	883
<b>Products from recycled milk</b>	2 000	0
<b>Processed products from cereals</b>	2000	0
<b>Processed products from milk cream</b>	300	0

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47 The site of Finance ua / Quotas for export from Ukraine to EU/ [Electronic resource]: <http://news.finance.ua/ru/news/-/374720/kvoty-na-eksport-iz-ukrainy-v-es-stremitelno-zakanchivayutsya-spisok>; The site of the European Commission. [Electronic resource] / European Commission. - Electronic data. – Brussels: European Commission, 2008. – Access: [http://ec.europa.eu/agriculture/agrista/2010/table\\_en/C7-1-375.pdf](http://ec.europa.eu/agriculture/agrista/2010/table_en/C7-1-375.pdf)

48 The site of Finance ua / Quotas for export from Ukraine to EU/ [Electronic resource]: <http://news.finance.ua/ru/news/-/374720/kvoty-na-eksport-iz-ukrainy-v-es-stremitelno-zakanchivayutsya-spisok>

However, it should be noted that still remain unselected quotas for the supply of processed products to the EU, namely:

- lamb meat (1 500 tonnes);
- PRODUCTION of processed milk (2,000 tons);
- processed cereal products (2,000 tons);
- processed products with dairy cream (300 tons) and others.

The analysis of statistical data (tables 2, 3, 4, 5) shows that Ukraine is a world leader in the production and export of cereals, legumes and oilseeds, also sunflower and soybean oil. However, aside the fact remains that the vast majority of production is exported as raw and do not processed in Ukraine. Thus, exporting raw materials Ukraine does not use the possibility of creating added value in its territory without thereby creating jobs in manufacturing.

Among the main factors that hinder the development of the processing industry on the above-mentioned areas, in our opinion, are:

- devaluation of the currency over the past 2.5 years by 300%;
- high cost of financing agriculture. Domestic banks lending to agricultural enterprises with an interest rate not lower than 20% per annum. Regarding the EBRD and the ICF, these lenders worldwide with a very reputable, does not lend to the agricultural enterprises in Ukraine. The main reason of it is an absence of land market and inability to obtain land as collateral for bank loans. These banks do not accept other collateral: the future harvest grain at elevators, etc., canceled the special tax provisions.

Given the importance of agricultural production, including processing industry for the national economy of Ukraine we emphasize that one of the most promising areas of effective functioning of Ukrainian processing industry is to attract foreign investment. Among the competitive advantages of agricultural sector of Ukraine for investment, in our opinion, are:

- the unique soil;
- there are large areas of agricultural land, which are available for rent; low costs of rent;
- cheap and skilled labor force;
- big and wide experience in agriculture;
- relatively low cost of production;
- low barriers to market entry;
- availability of agricultural enterprises which bear losses is an easy target for absorption;
- the high potential of increasing the yield under conditions of providing of advanced technologies.

As you can see, attracting of foreign investment for the development of agriculture processing direction in Ukraine will increase the potential competitiveness of domestic enterprises in the global market. Moreover, the potential of competitiveness, is being considered by us, as a set of available resources, capabilities and competencies for the forming and implementation of competitive advantage.

Consequently, according to the results of the analysis of investment attractiveness of Ukrainian agriculture we indicate two promising areas for investment:

- 1) to invest in processing industry, including:
  - build the capacity of soybean processing (meal, cake and oil);
  - recovery the capacities to process beet in molasses and sugar beet pulp pellets;
  - build the capacity for processing corn (ethanol and gluten);
  - ethanol production;
- 2) invest in the transport industry, including: port construction is a highly profitable area for investment because of the high cost of transshipment, which in Ukraine is \$ 14-18 per ton, while in Europe – 5.7 \$ per ton. Return on investment in Ukraine is 3-5 years;
- 3) construction of vegetable storehouses and elevators.

### REFERENCES

1. Agriculture of Ukraine; for the 2014 / State Statistics Service of Ukraine // Statistical Bulletin. – K.: State Statistics Service, 2014 – 384p
2. The site of the State Statistics Service of Ukraine. [Electronic resource] / State Statistics Service of Ukraine. – Electronic data. - K: State Statistics Service of Ukraine, 2013. – Access: <http://ukrstat.gov.ua/>
3. The site of Ministry of Agrarian Policy and Food of Ukraine. [Electronic resource] / Ministry of Agrarian Policy and Food of Ukraine. – Electronic data. – M.: Ministry of Agrarian Policy and Food of Ukraine, 2012. – Access: <http://minagro.gov.ua>
4. The site of the European Commission. [Electronic resource] / European Commission. - Electronic data. – Brussels: European Commission, 2008. – Access: [http://ec.europa.eu/agriculture/agrista/2010/table\\_en/C7-1-375.pdf](http://ec.europa.eu/agriculture/agrista/2010/table_en/C7-1-375.pdf)
5. The site of Finance ua / Quotas for export from Ukraine to EU/ [Electronic resource]: <http://news.finance.ua/ru/news/-/374720/kvoty-na-eksport-iz-ukrainy-ves-stremitelno-zakanchivayutsya-spisok>

## CHAPTER 2.

### PRIORITIES OF SOCIO-ECONOMIC DEVELOPMENT OF GEORGIA AND UKRAINE: INNOVATIVE APPROACHES AND PERSPECTIVES

#### 2.1 Modern tendencies of economic development of Georgia and challenges: Comparative analysis of Georgia-Ukraine

##### Actuality of problem

In recent years Georgia faces the tendencies of economic increase, though country still faces the continuation of policies, because the social-economic condition of population has not improved significantly, particularly in direction of decreasing the level of poverty. The targets set in applicable strategic and program documents which are related to the important decrease of poverty and unemployment, are yet not achieved [1]. Respectively, the main assignment for Georgia is the creation of principle for increasing long-term inclusive economic increase and elevation swof population's wellbeing.

The economic development strategy of Georgia is directed to the rapid economic increase which provides the fortification of country's competitiveness. Based on strategy the establishment of such country is determined which will be the carrier of European values and high quality educational system, having the economic established on the principles of free market, oriented on export, competitive in region [2]. For achieving such targets it is important to consider three basic principles: 1. Provision of rapid and effective economic increase oriented on the development of real (industrial) sector of economic; 2. Economic policy supporting the inclusive economic increase; 3. Rational use of natural resources in the process of economic development.

The basic direction in foreign and domestic policy of Georgia is the integration in EU. Respectively, for the country the effective execution of “Association Agreement between Georgia and EU” and development of economic cooperation with partner countries is important.

For evaluation the priorities of inclusive economic increase and development of international relations in Georgia it is necessary to study the social-economic development tendencies, identification of factors preventing the economic increase processes and for solving them the development of recommendations. For developing the study and optimal recommendations of these problems it is important to make the comparative analysis of countries.

Due to the principles of social-economic development concepts of Georgia, also in relevance with the priorities of economic cooperation with partner countries during the comparative analysis of countries the natural-resource, economic and political as well as ethnic, cultural, historic and other factors are to be considered.

Georgia and Ukraine have whole range of similarities according to the non effective usage of natural-resource potential, economic development regulations, political and historic-cultural factors. Relevantly, for evaluating the modern tendencies and challenges of economic development of Georgia, also for developing recommendations the comparative analysis will be significant.

According to the basic indicators of Georgia and Ukraine there are following similarities-differencies (see scheme 1).

The comparative analysis of Georgia and Ukraine shows that according to the territory Ukraine occupies 8.7 times more area comparing to Georgia, and has 12.3 times more population. Nominal entire domestic product in Georgia is 14 332.9 mln USD, in Ukraine – 93 270.5 mln USD (6.5 times more). The agricultural land in Georgia occupies 3771.2 thousand hectares, in Ukraine – 41.5 mln ha (11.2 times more). According to the qualitative indicators there are no significant differences distinguished. For example,

**Scheme 1. Basic indicators of Georgia and Ukraine [3]**

	<b>Georgia</b>	<b>Ukraine</b>
<b>Territory</b>	69 700 sq.m.	603 700 sq.m.
<b>Population</b>	3, 7 mln people	45,4 mln people
<b>Closeness</b>	58 p/sq.m.	78 p.sq.m.
<b>Nominal entire domestic product</b>	14 332,9 mln USD	93 270,5mln USD
<b>Nominal entire domestic product per one person</b>	\$3852	\$3575
<b>Real increase of domestic product value</b>	2,8%	2.3%
<b>Inflation</b>	6,4%	14,6%
<b>Agricultural land area</b>	3771,2 thousand ha	41,5 mln ha
<b>Agricultural land area in total land fund of the country</b>	36,8%	71,2%
<b>Human evolution index</b>	0.733	0.729
<b>The portion of agriculture in entire domestic product</b>	9,3%	10,2%
<b>The portion of recruited in agriculture</b>	48%	24,7%
<b>Level of unemploymentn</b>	11,8%	9,4%
<b>Inflation, as of 2017</b>	7,1%	15,9%
<b>Number of years spent on study</b>	13,8	11,67
<b>Educational expenses /total European indicator 5-12%/</b>	2,5%	5,9%

nominal entire domestic product per one person in Georgia is 3852 USD, in Ukraine 3575 USD, the real average annual increase of entire domestic product in both countries are almost similar (in Georgia 2.8%, in Ukraine 2.3%), the human evolution index (the average level of evolution) in both countries is 0.7 and so on. There is no important difference between the rest indicators. According to the cultural-historic factors of Georgia and Ukraine have multi-century lasted relations. Thus, it may be concluded that considering the average level of evolution, also based on the intensivity indicators of using natural-resource potential, political and other factors Georgia and Ukraine have no significant differences. The comparative analysis of these

countries it is reasonable in relevance with the following factors:

- **Natural-resource factors** – Georgia and Ukraine have relevant natural-resource potential, though the level of using them per one person is inefficient, which from the point of production establishes limiting conditions [4];
- **Economic factors:** In both countries similar tendencies of economic increase are denoted. First of all, economic policies in Georgia have started with liberalization and strict fiscal policy, which caused the termination of inflation and terms for free evolution in comparison with the country economic. In Ukraine during recent period the tendencies for decreasing entire domestic product and increase of inflation. Namely, the indicator of entire domestic product in 2016 in comparison with the previous year is decreases by 6.8%, particularly the level of inflation is high which basically is conditioned by the devaluation of hryvnia [5]. Like Georgia the liberalization of economic and pursue of strict fiscal policy creates available terms for economic development.
- **Political factors:** both countries have similar political risks from neighbor countries;
- **Historic-cultural factors:** Georgia and Ukraine have multi-century life and coexistence model.

In relevance with the comparative analysis of data similar tendencies of economic development in Georgia and Ukraine are expected. The comparative analyses of tendencies of economic development of these two countries reveal the modern challenges and assist the development of economic relations between countries.

**The target of study** is the revealing of modern challenges on the basis of analysis of tendencies of economic development of country and development of recommendations for overcoming them.

For making comparative analysis of countries it is important to make analysis of mutual agreements and memorandums. More than 104 kinds

of agreements and memorandums have been signed between Georgia and Republic of Ukraine in the fields of free trade, economic, communication, Customs', transport, state security, competitive policy, education, defense and other areas, also by Ministries, among them the "Agreement about commercial-economic cooperation development between the governments of the Republics of Georgia and Ukraine," "Agreement about friendship, cooperation and inter-assistance between the Republic of Georgia and Ukraine," "Agreement between the governments of Republic of Georgia and Ukraine in the field of communication," "Agreement about scientific-technical cooperation between the Government of Republic of Georgia and Government of Ukraine," "Agreement about cooperation between the Governments of the Republics of Georgia and Ukraine in the field of health care," "Agreement about railway transport operation between the governments of Republics of Georgia and Ukraine," "Agreement about free trade between the Governments of Republics of Georgia and Ukraine" and other [6].

The expansion of effective economic cooperation on the basis of agreements and memorandums depends on the tendencies of economic development in these countries. When making the estimation of tendencies of economic development of Georgia we should consider that the long-term development of 2014-2020 has been planned on the basis of rapid economic increase. For 2020 Georgia will be the country of revenue higher than the average. Namely, the entire domestic product per one person for the end of 2020 it will be more than 8500 USD. For achieving such result it is necessary to have the annual speed of economic increase in 7% at least [7].

Based on the information of World Bank, the economic increase in Georgia in 2017 is considered to be 5.2%. According to the "global economic perspectives" of new report of Bank, the economic increase indicator for 2018 will be increased up to 5.3%, though for 2019 will be decreased till

5.0%. It should be also denoted that according to the last report, World Bank has improved the prognosis of economic increase of Georgia by 0.7%, for 2018 – 0.3%. Also the same organization has decreased the prognosis of global economic increase for 2017 and 2018. According to the report made by Bank in 2017, also in 2018 the economic increase throughout the world has been decreased by 0.1% average [8].

The tendency of economic increase in Georgia is generally increasable. Though, according to sectors indicators are various. The tendency for increasing the entire domestic product during recent year has been increased for several times (see diagram 1).

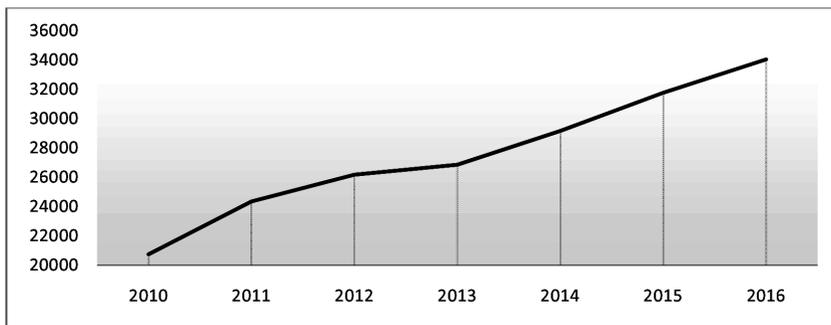


Diagram 1. Tendency of increase of the entire domestic product in Georgia [9].

### Mln GEL

In 2016 the economic increase in Georgia comprised 2.7%. The main factor of economic increase was investments, namely positive tendencies have been determined in domestic as well as direct foreign investments. In the region of Caucasus, Georgia is distinguished for the point of view of investment attraction. The volume of direct foreign investments in 2016 was 1 645 mln USD, which is 5% more than the relevant indicator of 2015. Also, it should also be denoted that in formation of economic increase the privet sector plays priority role. During the same period the turnover of business

sector increased by 13.3%, in this sector the number of recruited person has been increased by 6.2% [10].

According to the economic sectors of Georgia the tendencies of increase are differentiated. According to the traditional attitudes there are three sectors in economic examined: agriculture (primary sector), industry (secondary sector) and service (third sector). The sectors named are reasonably to characterize according to the industrial factors used in sector. Primarily, basically land and natural resources are used in sector, in second sector – physical capital, and in third sector – labor force. Sometimes fourth sector is also used in the form of economic established on knowledge, where product is produced using human capital, education, knowledge and other intellectual industrial factors. The scientific researches it has been evidenced that casting orientation on progress technologies became the motor force of economic of highly developed countries. With these technologies countries increased the volume of export which in its turn made entire economic move forward [11]. Such conceptual attitude is particularly important for those countries which start from the economic development to traditional economic (from agriculture) and using the economic and modern technologies established on knowledge try to obtain positions at international markets.

The most part of the structure of entire domestic product in Georgia is occupied by trade – 17%, industry – 11%, transport and communication – 10%, agriculture – 9.3%, construction – 8% and so on.

The volume of nominal entire domestic product of Ukraine is 6.5 times more than relevant indicator, though based on the calculation per one person this indicator in Georgia is 271 mln GEL more than comparing to Ukraine.

In accordance with program 2036 of social-economic development program of Ukraine the main strategic target of this country is the increase of entire domestic product by 500 billions of USD and the expected income for one Ukrainian – by 500 billions of USD [12]. Based on the information of 2015 the entire domestic product of Ukraine is 85 billions of USD and

The structure of entire domestic product in Georgia is given in diagram 2.

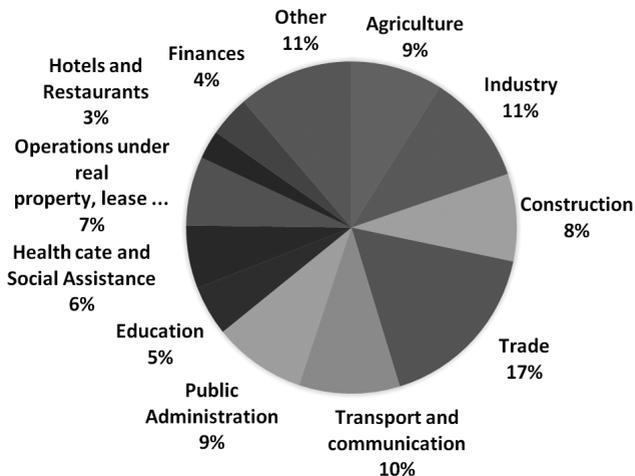


Diagram 2. The structure of entire domestic product of Georgia in 2016  
Source: [www.geostat.ge](http://www.geostat.ge)

based on calculation per one person is 1450 USD. Mentioned incomes are allocated between populations unequally – Gini coefficient is 0.3. due to the mentioned, for the socio-economic development of Ukraine is the most important to have the annual stable increase of economic. For this it is necessary to make effective usage of resources, modernization of non competitive monopolized system, orientation on innovative development and other. For 2036 for achieving the above mentioned entire domestic product it is planned to have the annual increase of this indicator by 15% till 2030 and from 2031 - by 12%.

In terms of such increase tendency it is reasonable to have the structural transformation of economic. The structure of relevant entire domestic

product of Ukraine as of the information of 2015 mostly is oriented on the extensive development of economic (see table 1).

**Table 1.**

**Structure of economic of Ukraine in 2015 [13].**

<b>entire domestic product</b>	<b>100%</b>	<b>85 billions of USD</b>
Agriculture	10,2%	8,7
Industry	16,9%	14,4
Construction	2,2%	1,9
Energy	2,9%	2,5
Commerce	14,2%	12,1
Transport	7%	5,9
Information and tele communication	3%	2,5
Public administration and defense	4,8%	4,1
Health care and education	8,4%	7,1
Art, sport and culture	0,8%	0,7
Financial and insurance business	4,4%	3,7
Other kinds of businesses	24,9%	21,2

As it is seen from the table, the most proportional rate in economic the field of industry is presented with 16.9%, also trade – with 14.2%, 10.2% is occupied by agriculture, 8.4% is occupied by healthcare and education. For 2036 the significant increase of major economic indicators is planned (see table 2)

Table 2.

**Tendency of increasing basic economic indicators  
in Ukraine for 2036 [13]**

**Incomes from population**

<b>Allocation income</b>	<b>7000 USD</b>
Currently	1400 USD
<b>Minimum wage rate</b>	<b>450 USD</b>
Currently	55 USD
<b>Minimum pension</b>	<b>250 USD</b>
Currently	43 USD
<b>Average salary</b>	<b>1000 USD</b>
Currently	190 USD
<b>Average pension</b>	<b>450 USD</b>
Currently	65 USD
<b>interim minimum</b>	<b>300 USD</b>
Currentgly	55 USD
<b>Differentiation of incomes based on various groups of population</b>	<b>See diagram above</b>

For 2036 for achieving target it is reasonable to develop economic established on innovations, particularly in the field of energy. Currently in economic of Ukraine considering the formulated stages it is expected to increase the portion of energy sector up to 6%. In accordance with strategic targets 2036 the portion of agriculture is decreased by 1%, industry – 0.9%, construction – 2.8%, trade – 2.2%, healthcare and education – 1.4% and so on. For achieving the tendencies planned for increase of economic first of all it would be necessary to to execute system investments, particularly in real sectors of economic.

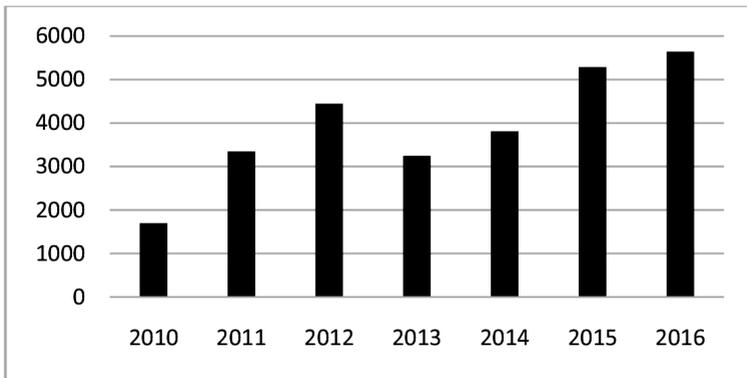
The problems of formation of effective model of economic of Ukraine are actively researched by Ukrainian scientists. Generally, during the process

of general economic development model selection for Post Soviet countries whole range of methodology complications are characteristic. From theoretic point of view, selection is wide, though due to practical opinions there are significant complications are raised in the processes of economic transformation. It is known that market transformation may be executed in several directions, including it is important to have important macro-economic stabilization, liberalization of prices and markets, privatization and restructuring, institutional policies. These directions in the form of so-called “shock therapy” the approbation was awarded to the following countries: Poland, Czech, Moldova, Romania, Kirgizstan and other countries. Though, the mixed reformation ways have been selected through the elements of institutionalism. As researchers as the majority of politicians the market transformation model of Ukraine has been negatively assessed, particularly is applies to the institutional policies. Respectively, for achieving the targets established during the long-term period of social-economic development of Ukraine it is actual to make corrections of transformation model.

On the basis of entire domestic product it is important to make the estimation of tendencies of increase according to the sectors. The analysis made according to the economic sectors of Georgia has shown that during last five years it was the construction sector which has developed most – by average 16.3%. The tendencies of increase have been distinguished also on the basis of information available at [www.geostat.ge](http://www.geostat.ge) in the sectors of trade (8%), transport (8.5%), communication (6.2%) and finances (10.6).

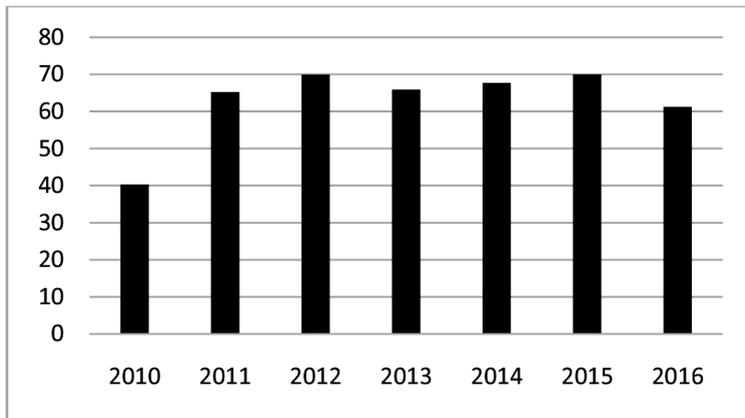
The sector of construction is distinguished for particular tendency increasing from the fields of economic of Georgia (see diagram 3).

In construction sector comparing to 2010 the indicator of production has been increased by more than 4 mln of GEL. The numericity of recruited in contradiction with the tendency of increase in sector (see diagram 4).



**Diagram 3. Increasing tendency of construction sector**

Mln of GEL, source [www.economy.ge](http://www.economy.ge)



**Diagram 4. Number of recruited in the field of construction (1000 men)**

The industrial production in Georgia is characterized by increase tendency annually, though there is no industrial boom denoted. The study of major economic indicators of industrial field has shown that the number of

enterprises registered in 2016 is 598947, which is 126390 GEL more than the relevant indicator of 2012. The volume of product is manufactured in the same period has been increased by 11060.9 mln of GEL. In 2016 the added value comprised 16772.4 mln GEL [14].

The agro-food sector is the traditional field of activity for Georgia, though yet the level of competition of majority of products is low. Basically, wine and nuts are examined among the competitive products. The level of competition of rest of the products is low or not competitive [15]. From the point of development tendencies in this sector the low economic increase has been noted (average 1.2%). The portion of agriculture in Georgia is almost the same in entire domestic product, as in Ukraine. From the point of productivity there are low figures in both countries. Generally, the important similarity of Ukraine with Georgia according to resource potential is associated with the inefficient usage of resources mostly, particularly in agriculture – in both countries agriculture provides the small number of population with agro-food products. Almost half of the population in Georgia is approximately 9.3% of entire domestic product. It is clear that this very small indicator and from the social as well as economic point of view, is the problem for country, for example, 2.7% of population in countryside in Israel is recruited but the country is the leader in the field of agrarian production, because main motor way is business and not specifically agriculture [16]. In Georgia the tendencies of increase of agro-business are distinguished, though the increase speeds are low and is not enough for achieving the stable food supply [17].

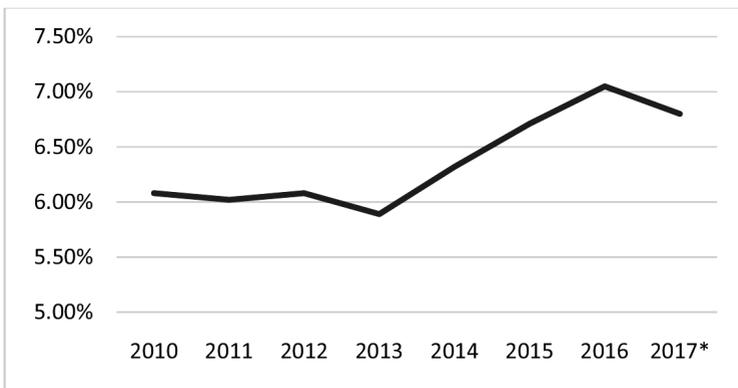
The positive tendency of increase lasted in the sector of tourism, which represents one of the rapid increasing and significant direction of economic of Georgia (see diagrams 6 and 7). In 2016 the incomes from international tourism has increased by 12% and in comparison with the previous year by 230 billions of USD more than the currency income has been fixed. During last 5 years tourism has been established as one of the important sectors. In the beginning of year the negative impact has been made on economic

**CHAPTER 2. PRIORITIES OF SOCIO-ECONOMIC DEVELOPMENT OF GEORGIA AND UKRAINE: INNOVATIVE APPROACHES AND PERSPECTIVES**

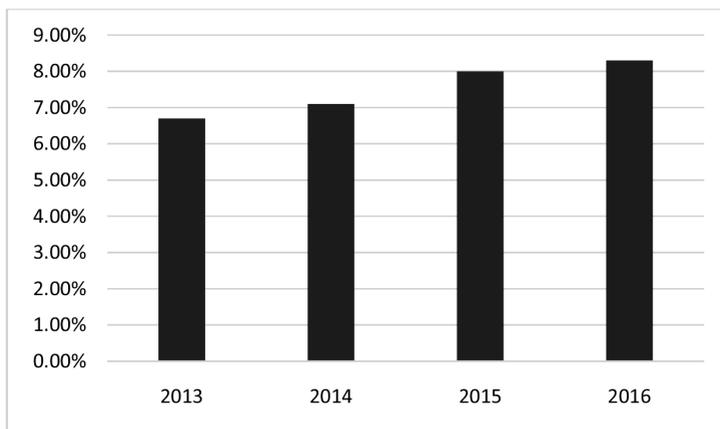
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increase by the decreased indicator of consumption. Though, since second half of 2016 the volume of monetary transfers have significantly increased and as a result, in 2016 this indicator had 6.6% increase which had positive reflection on the indicators of wellbeing of population [18].



**Diagram 5. Agro-business increase tendency in Georgia, source [www.geostat.ge](http://www.geostat.ge)**

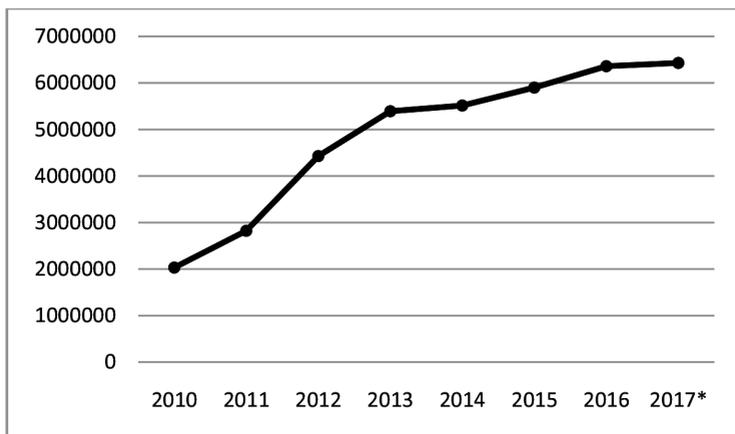


**Diagram 6. Tendencies of increase of tourism sector source [www.economy.ge](http://www.economy.ge)**

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

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**Diagram 7. International travel statistics**

Generally, the development of tourism, as the additional income source, improves the social-economic problems. It is clear that it'd be better to search for such field of activity which is traditional for population and also is characterized with comparatively less expenditures and high marge of profit. Such field for Georgia is vine and wine-growing and respectively wine tourism, evenmore that the demand on this tourist product is increasing [19]. Also it is possible to develop other kinds of agro-tourism.

The level of unemployment in Georgia is 16%. This indicator for the countries of such group is not high, though in real approximately two thirds of labor force is self-employed. The majority of self-employed people are recruited in agriculture. Their majority produces the product for their own consumption. Due to the mentioned, the numbers of unemployed and self-employed people in the country comprise 70% of hardworking population. The population of countryside of Georgia even nowadays actively seeks the new ways of income and employment for maintaining self-being. For them it is better to seek for such field of activity which is traditional, is

relevance with their cultural-psychology environment, and is characterized with comparatively less expenditures and high marge of profit [20].

The increase of direct foreign investment had no effective impact on the economic development of country, including the indicator of employment. Generally, the execution of direct foreign investments assists the obtaining of new knowledge and implementation of technologies, which is the precondition of increase of export, diversification and new work places. Though, in Georgia this tendency is not denoted in scale which is necessary for the long-term economic increase. The mentioned was caused due to the fact that the great part of investments was directed in capital encompassing fields, where volume of employment is small.

Respectively executed economic policy could not provide the desirable result from the point of increasing export competitiveness. It was negligible to make the diversification of export; the increase of import volume has significantly run forward which caused the increase of negative foreign trade balance, which is the serious macro-economic risk for the economic of country.

**Table 4.**

**The tendency of export-import change in Georgia**

Mln USD, source: [www.geostat.ge](http://www.geostat.ge)

	<b>export</b>	<b>import</b>	<b>Foreign trade balance</b>
2010	1677	5236	-3559
2011	2186	7072	-4886
2012	2377	8056	-5680
2013	2910	8023	-5112
2014	2861	8602	-5741
2015	2205	7300	-5096
2016	2113	7295	-5181

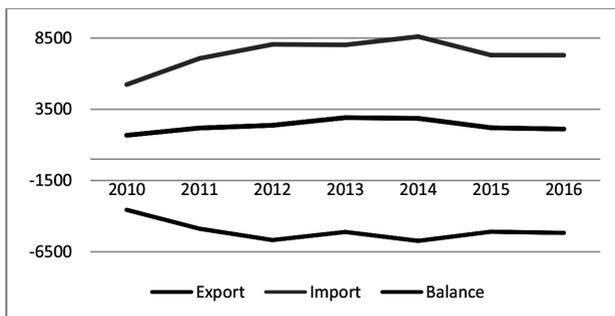
As it is seen from the data, the indicators of export and import are increasing, though still the import volume exceeds export (see diagram 8).

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

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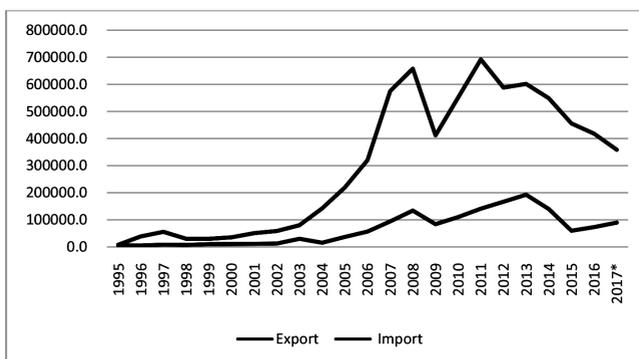


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**Diagram 8. The correlation of export-import in Georgia, source [www.geostat.ge](http://www.geostat.ge)**

Ukraine is the strategic partner of Georgia. Respectively, important part of foreign trade of Georgia comes on this country (see diagram 9).

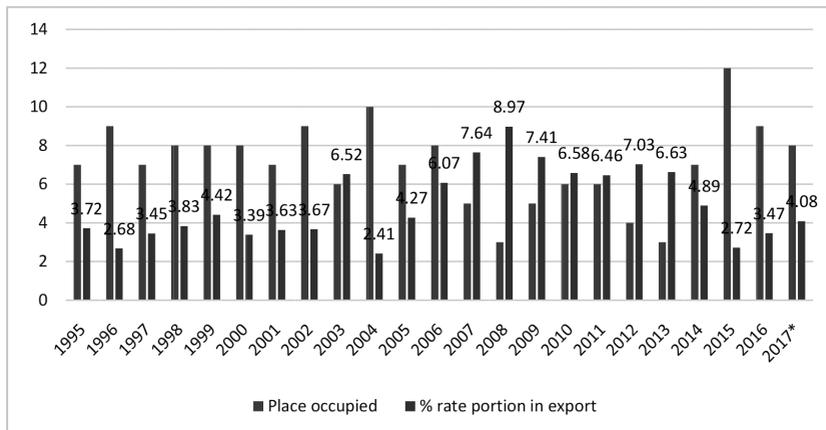


**Diagram 9. The commercial turnover of Georgia-Ukraine according to 1995-2017\*  
(export-import)**

**Thousand USD**

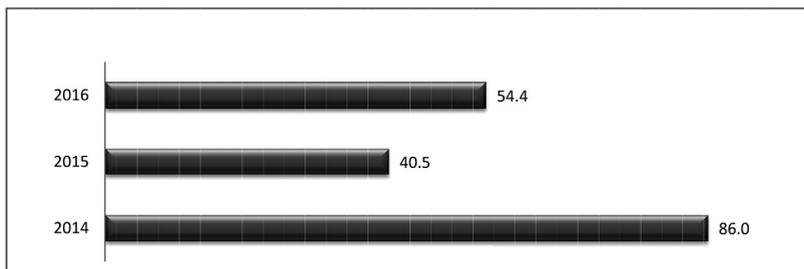
The % portion of Georgian export in Ukraine and occupied place between the exporter countries in dynamic are given in the diagram 10.

**CHAPTER 2. PRIORITIES OF SOCIO-ECONOMIC DEVELOPMENT OF GEORGIA AND UKRAINE: INNOVATIVE APPROACHES AND PERSPECTIVES**



**Diagram 10. The portion of export of Georgia in Ukraine. Source: www.geostat.ge**

The economic relations of Georgia – Ukraine is especially distinguished in agro-food sector. From Georgia to Ukraine in 2016 the export of agro-food products in amount of 54.4 mln USD has been made, which is 34% more than the indicator of previous year. The portion of Ukraine in entire agro-food export is 7.9% (see diagram 11).



**Diagram 11. The volume of export of Georgian agro-food products in Ukraine [22].**

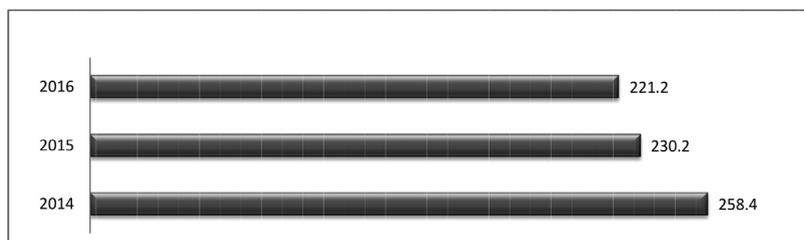
### **Mln USD**

From the agro-food products exported in Ukraine the spirits, mineral and salt waters, natural wines of grape, citrus, nuts, leave of bay-tree, greens, dried fruit, cigarette, frozen fish, tea and other are distinguished. The total cost of export of mentioned products according to the years comprise 97-98% of entire value of export of agro-food export in Ukraine.

In 2016 in comparison with the previous year the value of export of basic exporting products, namely the export of spirits has been increased by 63% (17.4 mln USD), mineral waters – by 2% (13.9 mln USD), wine – by 58% (12.4 mln USD), citrus - by 77% (3.2 mln USD), nuts – by 89% (1.7 mln USD).

During the first 10 months of 2017 the value of product exported in Ukraine from Georgia has been increased by 25% in comparison with the analogue period of previous year and comprised 47.2 mln USD. The increase of export is basically caused by natural wines of grape (by 45%), mineral and salt waters (by 23%) and spirits (by 14%) from the point of increase of export.

The contradictory tendency is denoted from the point of tendency of import executed from Ukraine to Georgia. In 2016 the agro-food product with the value of 221.2 mln USD has been imported from Ukraine to Georgia. This indicator is decreased by 4% comparing to previous year and in comparison with 2014 the mentioned indicator was decreased by 14%. The portion of Ukraine in entire agro-food import comprised 21.0% (see diagram 12).



**Diagram 12. Volume of agro-food products imported from Ukraine to Georgia**

### **Miln USD**

Mostly tobacco, sugar, soya, chocolate products, chicken meat, oil, flour confectionary products, non alcoholic distilled beverages, milk powder and other are imported from Ukraine to Georgia. As of 2016 data, the value of imported tobacco comprised 61 mln USD and its portion is 28% in entire value of import of agro-food product imported from Ukraine. In 2016, in comparison with 2015 the value of imported tobacco has been decreased by 11%. Relevantly, the decrease in importing tobacco is one of the reasons for decreasing the import of agro-food product executed from Ukraine. As of 2016 daya the decrease has been experienced by the import of chocolate products and oil.

In 2016 the value of chocolate products imported from Ukraine, has been decreased by 16% and comprised 11.7 mln USD, and the import of oil has decreased by 50% and comprised 9.1 mln USD.

In difference with the above mentioned products, the tendency of important increase the import of sugar is characterized. In 2016 the value of imported sugar comprised 23 mln USD, while the mentioned indicator in 2015 was only 0.8 miln USD. The import of soya, bird meat and butter has been increased. Generally, the comparative analysis of indicators has shown that in 2016 in the sector of agro-food the commercial balance of Georgia with Ukraine is negative and comprised 166.9 mln USD.

Based on advance data of 2017 the value of product imported in Georgia is increased by 14% comparing to analogue period of previous year and comprised 186 mln USD, which basically is caused by the increase of tobacco (23%) and pork (8 times) import. At the same period, also the value of imported cattle frozen meat, meat of alive pigs and bird meat has been increased. In 2012-2017 the commercial balance between Georgia and Ukraine gives clear impression in tables 5,6 and 7 [source: tables are executed on the basis of information available from the Ministry of Agriculture of Georgia].

**Table 5.**

**The indicators of foreign trade of Georgia-Ukraine  
in agro-food sector**

Thousand USD

	2012	2013	2014	2015	2016	2017 (10 months)
export	112,864	119,549	85,980	40,472	54,361	47,189
import	234,911	267,006	258,394	230,196	221,211	186,228
<b>balance</b>	<b>-122,047</b>	<b>-147,457</b>	<b>-172,414</b>	<b>-189,724</b>	<b>-166,850</b>	<b>-139,039</b>

**Table 6.**

**Volume of export of agro-food production from Georgia to Ukraine**

code	title	2014		2015		2016	
		Thousand USD	tons	Thousand USD	tons	Thousand USD	tons
	<b>Export, totally</b>	<b>85,980</b>		<b>40,472</b>		<b>54,361</b>	
	Spirits, with spirit concentration less than 80% (liter 100% spirit)	23,728	3,302,035	10,661	2,275,706	17,420	5,128,458
	Mineral and salt waters (liter)	28,093	30,817,781	13,574	16,542,246	13,912	22,179,009
	Natural wines of grape (liter)	20,412	6,280,399	7,876	2,696,033	12,405	4,846,788
	citruses	3,044	6,984	1,822	4,076	3,218	7,801
	nuts	4,675	649	911	152	1,722	343
	Leave of bay-tree	1,292	842	1,221	771	1,131	686
	greens	2,260	1,934	1,833	1,547	1,097	1,390
	Dogwood, dried fruit	950	1,712	1,307	3,020	1,076	2,448
	Tobacco (thousand sticks)	3	58	1	21	529	43,510
	Frozen fish	24	40	163	322	229	423
	tea	207	183	272	120	211	93
	Rest of products	1,290		831		1,412	

Table 7.

Volume of import of agro-food from Georgia to Ukraine

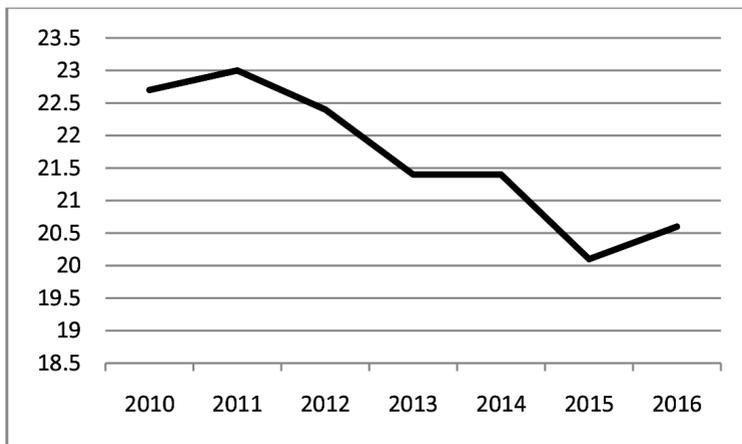
	title	2014		2015		2016	
		Thousand USD	tons	Thousand USD	tons	Thousand USD	tons
	იმპორტი, სულ	<b>258,394</b>		<b>230,196</b>		<b>221,211</b>	
	<b>Tobacco</b> (thousand sticks)	93,002	6,930,362	68,539	5,711,957	61,031	5,673,901
	<b>sugar</b>	271	379	834	1,826	23,059	43,061
	<b>Soya</b>	498	1,008	6,826	12,976	13,749	32,167
	<b>Chocolate products</b>	18,531	6,726	13,864	5,926	11,666	5,361
	<b>Bird meat</b>	14,730	9,396	7,985	6,302	9,545	9,019
	<b>oil</b>	17,917	15,627	18,049	17,601	9,105	9,230
	<b>Floury confectionary products</b>	12,290	6,718	8,784	5,878	8,189	5,884
	<b>butter</b>	1,800	444	3,375	1,072	6,464	1,885
	<b>Non alcoholic distilled beverages</b> (liter)	8,863	9,691,370	8,398	10,642,985	6,315	9,288,053
	<b>Confectionary from sugar</b>	7,333	4,385	6,508	4,760	5,585	4,381
	<b>Margarine</b>	8,499	6,186	5,820	4,566	4,907	3,849
	<b>Animal food</b>	4,606	8,403	4,122	9,627	4,198	10,287
	<b>Milk powder</b>	8,266	3,183	8,430	4,938	4,014	2,712
	<b>Coffee and tea extracts</b>	3,562	659	4,470	895	3,496	1,034
	<b>Spirit beverages</b>	4,266	642,508	5,387	1,122,410	2,287	590,776
	<b>Rest products</b>	53,962		58,804		47,600	

The result gained by the above mentioned economic increase and export-import inefficient structure could not provide the significant decrease of the level of poverty. It may be said that in recent decade the figures of poverty had not changed almost. Also the portion of population being under 60% of median consumption in Georgia is still high, which is certified by the below diagrams.

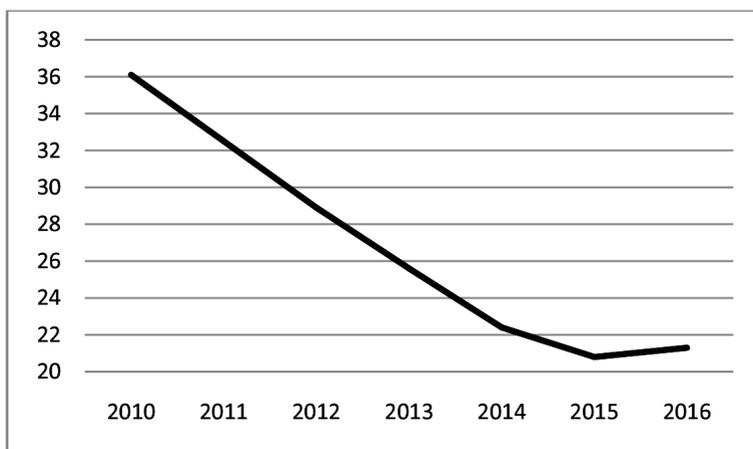
**Diagram 13. The indicators of poverty in Georgia**

source: Geostat.ge].

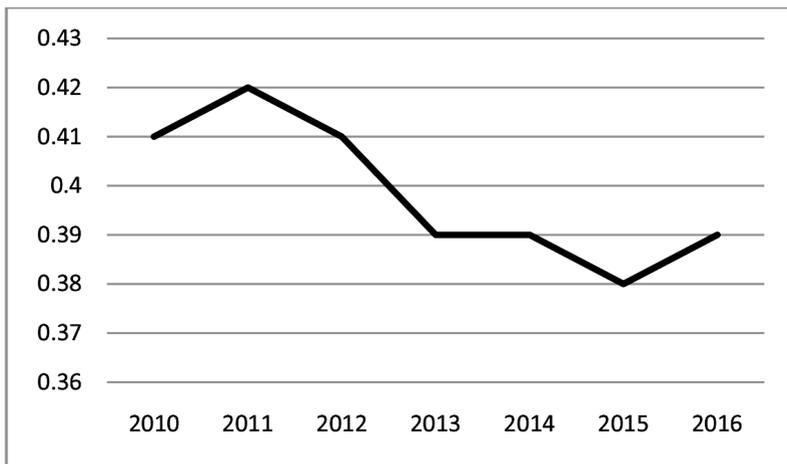
**a/ Indicator of relative poverty (%)**



**b/ indicator of absolute poverty (%). Basic year of 2015**



c/ Gini coefficient



Inequality rate in Georgia is calculated by economists' calculations, two times higher than the European level. The richest 10% of the country's income is 17-18 times higher than the poorest income, and the difference in cash revenues is even greater. This is also indicative of the Gini coefficient that has continued to increase in 2016 [23]. According to the National Statistics Office of Georgia, in 2016, the Gini coefficient amounted to more than 0,39 per gross revenue, and in 2015 it was 0.38. 21% of the population lives in absolute poverty, which is very high. This means that every fifth person lives below the poverty line.

The poverty rate is high in Ukraine too. Gini coefficient varies within a period of 0,35-04. The level of inequality limits economic freedom in society and causes stagnation. The improvement of trade-economic relations between Georgia and Ukraine can contribute to the elimination of inequalities in income and the welfare of the population.

Ukraine in the trade relations with Georgia in 2014-2016 has moved from the 3rd place to the 8th place according to the export data, and according to

the import was 6th place. The trend of decrease is also observed in the current period. Due to the trend of decreasing trade relations, experts estimate that export losses are only 30 million USD in January-February of 2016.

Except the trade-economic relations, Ukraine is an important economic partner for Georgia, even with the utilization of investment potential. In 1996-2015 Georgia invested 63 million USD from Ukraine, while the volume of investments from Georgia amounted to 14.7 million USD. Accordingly, Ukraine's investments are positive and 48.3 million dollars, which will have a positive effect on the economic development of the countries.

The trends of development of Georgia and Ukraine and the trade-economic relations between these two countries, the identification of the impeding factors of development has revealed a number of problems, including:

- Georgia and Ukraine according to quantitative indicators (area, population, GDP, agricultural land, etc.) are different countries, but calculating one per capita economic indicators are almost similar. Countries have a resource potential for economic development, but their level of use is quite low, which negatively impacts economic growth trends. Effective use of resource potential is a significant reserve of economic growth;
- The overall trade turnover between Georgia and Ukraine has decreased by 13.7% in recent years. Changes in the trade sector between Georgia and Ukraine are caused by economic and non-economic reasons. The main impact of the decrease in trade turnover and the deterioration of economic indicators have caused unstable conditions in Ukraine. In accordance with market risks, exporters and importers moved in anticipation, which significantly reduced the export-import volume. The trade volume and export-volume volume between Georgia and Ukraine is expected to be stabilized by political and economic factors;

- The inflation of Ukrainian hryvnia has led to a reduction in the purchasing power of this country, and consequently decreased revenues from exports have risen in the short term, exported from Georgia to Ukraine. The fluctuation rate of the Georgian Lari also affected the economic processes between Georgia and Ukraine. Larisa and Green stabilization will increase markets' purchasing power and sustainable sustainability of the country's gross revenue;
- Because of the visa-free regime with the European Union and high market capacity, some of the producers in Georgia have replaced export-oriented markets in relatively stable markets, mainly in EU countries. These markets became an alternative to the Ukrainian market, especially for agro-food products. Ukraine is a traditional partner country for Georgia, and therefore, developing and implementing stimulating economic policies, it is possible to expand partnership relations between the two countries, especially in the agricultural sector;
- Negative trends of economic development are high inflation in Georgia, especially in Ukraine. This process leads to reduction of real income in the population and negatively impact on the demand for work force. The level of unemployment in these countries worsens poverty and reduces the welfare of the population. It is necessary to set up economic mechanisms for reducing inflation and stabilization.
- In Georgia and Ukraine, trends of demand for investments are observed by the state, but lately the tendency of increasing demand for business sector investments is not observed. This conjuncture is a hindering factor for sustainable development of the economy. Increasing investment in business sphere is a key step in economic growth. With the improvement of the business environment and the relevant legislative initiatives, the state needs to provide businessmen with an interest in investing.

Thus, the conclusion is that Ukraine and development trends have primarily a positive impact on the trade-economic relations and economic growth in the short run, however, failed to provide Georgia and Ukraine's economy, raising competitiveness and inclusive economic growth for sustainable development Conditions for the long term. Economic growth trends did not have a significant impact on the reduction of unemployment and poverty rates, not substantially reflected on the welfare of these countries. Increasing prosperity by reducing unemployment, improving labor and living conditions, forming a basic social security system and developing human capital. Based on this, it is necessary to develop a new economic policy that will be based on innovative approaches and models.

## **2.2 Priorities of social-economic development and perspectives: innovative attitudes and models**

### **Actuality of problem**

The socio-economic development priorities and trends of the countries are largely dependent on technical progress, where the innovation plays a special role. In 21<sup>st</sup> century, the rapidly growing economy is based on innovations. Without innovative ideas and projects it is difficult to develop any segment of business, depending on the competitiveness of a particular firm at local and international levels.

Significance of innovation in the case of developing countries is increasing. One of the main driving forces in the development of small and medium business in these countries is the high-tech and inclusive innovations that are tailored to the country's natural-economic conditions, existing obstacles and peculiarities.

There are favorable natural and economic conditions for development of small and medium business in Georgia. However, production in these

sectors is low and it is necessary to use inclusive innovative approaches to their development.

Inclusive innovation promotes the development of a specific economic sphere of this country by implementing innovative ideas based on scientific knowledge. Thus, for the Georgian economy, which is currently in a difficult situation due to the development of small and medium businesses in the country, it is extremely important to plan innovative approach and relevant global practices.

An important challenge for Georgia is to develop a competitive model for socioeconomic development that will be based on knowledge and using modern technologies to ensure the welfare of the population. To overcome this challenge it is necessary to study the experience of other countries and to adapt the achievements.

Georgia is involved in open economic relations; the country has trade economic relations with many countries around the world. One of the most prominent countries in the socio-economic relations is Ukraine. It is one of the largest partners in the history of Georgia's market economic relations, which occupies the leading position among trade markets both in terms of export and import. Accordingly, the comparative analysis of Georgia-Ukraine is relevant to economic, political, social, cultural factors and promising direction of cooperation. Comparative analysis shows the socio-economic development trends in these countries with the main characteristics of innovation, the role of the state in the innovative development, the determining factors of innovation in small and medium businesses and future trends of innovative policy will be developed.

**The goal of the research** is to identify the current challenges of innovative development and to develop perspective directions through the study of the socio-economic trends of Georgia and Ukraine and the comparative analysis.

**Research Methods .** The paper uses different methods of research. Bibliographic research has assessed the scientific papers and publications of researchers, analytical reports, policy documents and data.

Using statistical methods (analysis, synthesis, induction and deduction), the selection and grouping of material was carried out, similarities between the events and processes were revealed, the development trends were established. The SWOT analysis revealed the socio-economic development problems.

In the framework of qualitative research, in-depth interviews were conducted with experts and experts. Grouping and priority schemes of interview results are revealed to the needs of innovative development of economics.

The paper uses materials from the relevant statistics of Georgia and Ukraine, data of ministries of economic profile, parliamentary policy documents, analytical reports, etc.

Economic development is impossible today without the use of innovations and modern technologies. Innovation is considered as a synonym for the development of nations, technological progress and business success. Particularly important is the impact of innovation on the social and social context of the economy. The role of innovative processes is especially high in solving the socio-economic problems of the country. Moreover, it is considered to be the main focus of globalization [24]. Due to this, economic development in the conditions of globalization should be built on the principles of innovative strategy and priorities.

Research of innovative processes is a complex and challenging problem in economic science. Most of the research is concentrated on the understanding of the innovation process, the need for the use of different theories in different fields of science and the interpretation of scientific definition [25]. In addition, researches define the degree of innovation and nature in specific organizations [26].

The researchers have studied the different components and intensities of the innovation process, [27] researching the quality of innovations in specific organizations [28].

The results of the impact of innovative processes on production trends and the problems associated with opening new markets in this view are reflected in Schumper's work [29], and researchers have also evaluated the attitude of competition forms and innovations. It is reflected in a number of works [30].

In the case of clusters, the impact of innovations on the development trends in the work of Linton is assessed. The scientist is based on different principles of innovation process and describes each cluster of definitions with its specific characteristics.

The main accents in scientific works are also made of conceptual issues and different aspects of innovation [32].

Variety of innovation characteristics are analyzed in other works by researchers [33; 34; 25] Scientists consider as "the generation, adoption, and implementation of new ideas, processes, products or services ... which is the first place in the organization [36; 37] Some researchers believe that innovation is a process by which a new and / or improved product / service is created [38].

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Some researchers believe that innovation is the basis for economic development and is the instrument for development of the least developed coun-

tries. The main types and innovations of innovation are defined by the Organization for Economic Co-operation and Development (OECD), [38; 39].

Innovative activities are primarily related to the promotion of product competitiveness, and innovations are also promoted to the rest of the goods. [40]

The researchers do not discuss the problem of innovative development only with scientific-technical aspects. This process involves a wide range of social issues - education, health care, and the level of life, which depends on the creation of highly qualified workers and ensuring that people pay for new goods and services. [41]

In the determination of the basic principles of socio-economic development of Georgia, the current provision is the development of innovative development. In the development of the National Innovative System Development Strategy Program, Georgian scientists discuss three main directions of innovative strategy: 1. "Reach" Strategy - Use of new, competitive products through the acquisition of foreign high-tech new technology licenses abroad; 2. Strategy of "borrowing" - the development of innovative technological products using the country's own innovative potential; 3. Strategy of "Strengthening" - Using new and advanced technologies to produce new competitive products, using the country's own scientific-technical and industrial-technological potential and international experience [42].

Factors of the innovative development of Georgia are:

- State policy documents supporting innovative activities are not perfect or vague;
- Innovative infrastructure is underdeveloped;
- Deficiency of financial resources of firms to develop innovative activities;
- The number of innovative enterprises is small, therefore their consequences are not affected by economic growth;

- Old technologies used in some areas of the real sector of the economy, which negatively impact the product's competitiveness, especially in the international markets;
- There are few innovative enterprises that are capable of rapid adaptation and response to the changing market environment.

Under these restrictions, Georgia should choose the way from innovative development models, which will provide the starting conditions. From this point of view, Georgia will be optimal for the development of a strategy. This direction of strategy is relatively less financially related and is based on the use of scientific-technological potential in the country. In addition, in some areas it is possible to use the "Strengthening" Strategy, especially where Georgia has strong international positions in the field of science and technology. The named strategies are desirable to reflect the state's priorities in the development strategies of the country. Technical field of priority: a modern scientific and technological progress, the development of entrepreneurship, innovation processes in developing economic and legal environment, the development of innovative infrastructure (innovative-technological centers, techno parks, business incubators, information systems specialists and trail This person upgrading systems management, innovation, support for a variety of funds, including venture capital investment, insurance and leasing companies, etc.).

The agriculture for Georgia as it was denoted is the traditional and priority field. In Georgia, there are suitable conditions for the development of agribusiness, since the liberal labor market functions, there are low labor costs, simplified tax administration and so on. In such conditions for the development of agribusiness it is important to identify the priorities needed for this process, in the direction of both primary production, and processing and the entire production chain. Equally important is the identification of innovative factors affecting the development of agribusiness, and the identification of development priorities [43].

The innovative development of the economy reflects the components of the Global Innovation Index. In this regard, Georgia has a growing tendency, but it can be said that the country is only at the previous stage of development of innovation policy, yet there is no uniform system of normative documents in the country. Consequently, the country is still facing big challenges. Moreover, Georgia has low scores in components that are the main source of innovative development in the long term, namely in human capital and research, as well as knowledge and technology components.

Considering the sectoral development and international tendencies of Georgia, we may consider priority areas of technology development: manufacturing of information, ecologically pure agro products, non-conventional energy, new materials, nanotechnology development, medical biotechnology, Extraction and processing technologies, etc.

For example, it is possible to consider the Israeli economy model. Initially Israeli economy was at the level of Georgia and local business development started with “cheap money”, including funding for startups. It is quite relevant to bring this experience to Israel. Israeli exports the idea of an average of 5 billion dollars per year. Startups have started to play a big role in this process. “Startups in Georgia should start funding. Considering the Israeli model, we believe that the first invention in Georgia’s smallest village will be the most poor family. I believe that Georgian nature, vision and combination are relevant to the invention of “startups” and Georgia’s greatest future in this regard “. Obviously, in this direction it is difficult to estimate that there are more funds to finance small business in Israel but in Georgia and Ukraine it is necessary to stimulate this sphere and therefore seek alternate ways of funding.

Development of open trade relations is important in selecting innovative models. The openness of trade leads to the economy’s specialization in the sectors which have a comparative advantage. These processes, in turn, promote reconstruction of production and innovative structures to increase

the economic and social welfare of the country [46]. Approaches to open trade relations are put in place in the context of farmers' development. It is necessary to focus on policy priorities in agriculture, attracting additional investments in the field of development, solving poverty reduction problems in rural areas, efficient use of resources and other [47].

An important role in innovative development is the state, because it is: A / is a guarantor of intellectual property protection; B / Provides funding for fundamental sciences research; G / implementing innovative policies; D / possessing strategic information, etc., [48].

The world trends in the field of innovation are estimated by global innovation indexes. The index of Georgian indexes has been improved recently, especially positive trends in the country's institutional arrangement and regulatory policy. However, the main weakness is the lack of support for the education and research sectors by the government and the private sector, as well as the limited use of innovations by businesses. By 2016, the country has been awarded 33.9 points (100 points) in the global index of innovations, which has significantly increased the previous year's corresponding indicator (33.8 points). In comparison with 2015, Georgia has moved up to 9 positions and is now ranked 64 out of 128 countries.

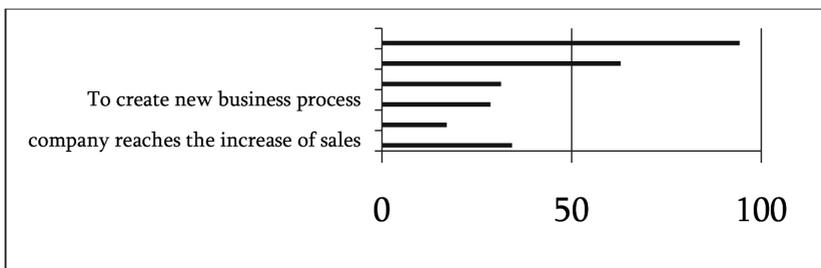
Despite the above positive changes, the country has low results in human capital, business development and creative production components, among other post-Soviet countries, Georgia has better results than other countries, including Ukraine. Therefore, it is necessary to develop relevant directions of innovation policy in Georgia.

Political stability is marked in Georgia, which according to the best result is institutional arrangement component (69.2 points). According to the Global Innovation Index, the worst indicators come from human capital and education. In this category Georgia has only 23.2 points (100) and occupied 91th position. The situation is similar to the private sector's innovative incentives: Georgia occupies 90th place with 26.5 points.

With innovative products criterion, Georgia holds 60th place with 26.7 points and 67th place with 41 points with innovations. The country's innovative efficiency coefficient is 0.7 and is ranked 67th among 128 countries. Based on these indicators, it is necessary to conclude that Georgia needs to encourage research and innovations, introduce innovative technologies in education, activate private sector in the use, introduction and creation of innovations, and encourage the creation / production of innovative products.

Today there is no unified system of normative documents in Georgia, the level of economic development that is needed to facilitate innovative development of business companies. However, the state is expressing the innovative policy and the innovative development of small and medium-sized enterprises.

Company's attitude towards positive results of innovation in Georgia is reflected in Figure 1.



**Diagram 1. The attitude of companies in Georgia towards the importance of innovations of**

### **Portion of positive responses in %**

In 2016 Georgia has significantly improved the small and medium enterprise environment and maintained macroeconomic stability, created an attractive business environment, simplified regulations, improved financing for the development of innovative policies, etc. In terms of small and medium business policy indexes, (See Diagram 2).

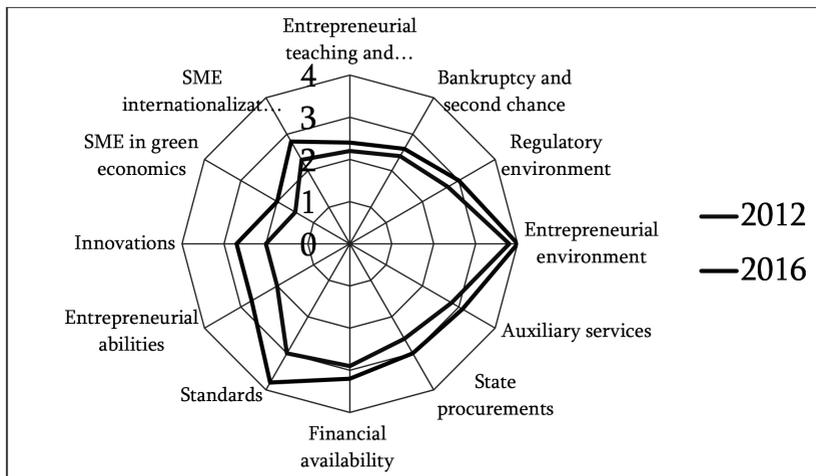


Diagram 2. Dynamics of small and middle enterprises' innovative indexes

The main priority in the process of innovation is the creation of human capital. Some researchers believe that initiatives from the government should be implemented in the following directions:

1. Enhances the possibilities of availability of knowledge through training / training system;
2. Facilitate transforming knowledge into new products, services, processes and ideas. Business Incubators are the best instrument in this regard for the development of small and medium sized businesses and innovations.

Recent priorities for promoting the establishment of high-tech enterprises in Georgia have been identified: "Law of Georgia on Information Technology Zones" [51] aimed at attracting investments and establishing an attractive environment for the establishment of various tax breaks Economic In the field of information technologies, Information Technology Technologies Park has been created for the purpose of generating and implementing

ideas in the field of IT / IT technologies; The first private venture fund was founded, the main purpose of which is the funding of innovative ideas and projects in the Information Technology Area of Georgia.

The innovative development in Georgia is based on strategic development of the country and this process is reflected in the project of the Social-Economic Development Strategy of Georgia 2020. Also, since 2014 the Agency of Innovations and Technologies has been working in Georgia to create an innovative ecosystem in Georgia and coordinate its development process, promoting the implementation of the country's innovations and technologies overall policies and strategies.

The level of involvement of companies in innovative sphere in Georgia is an increasing trend. Almost half (48.8%) of research companies conducted by the Statistics Department of Georgia creates new or substantially improved products [52]. This indicator is even higher in service sector - 51.2% (see Table 1).

**Table 1.**

**Innovations executed by Georgian enterprises in 2013-2015**

<b>Note: interest rate is given only in accordance with only response "YES"</b>	<b>%</b>	
Has your company imported the new or essentially improved product?	48.8	
Has your company imported the new or essentially improved service?	51.2	
<b>Totally</b>	<b>100</b>	
Innovation process in the field of product production or service provision is mostly executed by directly the companies (see table 2). The innovations executed directly by the companies in the field of production are 70.1%. Based on the cooperation with other enterprises or institutions by the companies the indicator of innovations is low, also low is the indicator of adjustment-modification of innovations worked out – average 9-10%.		

The study of smart innovations showed that significant innovative changes come from the creation of a new system of product / service (29,4%), and a high level of product aesthetic design and packaging (26.5%) and the introduction of new media or techniques to popularize product (24.6% ).

**Table 2.**

**Innovations worked out on the basis of cooperation of the company  
and/or with others in 2013-2015**

Average (%)

	Product innovation	Service innovation
Innovations worked out by the company directly	70.1%	61.4%
Innovations worked out by the company with other enterprise or institution (under institutions Universities, Scientific-research Organizations, Non Profit Organizations and so on)	10.6%	14.6%
Adjustment – Modification of innovations worked out by the company of other enterprise or institution	9.1%	13.7%
Innovations worked out by other company or institution	10.2%	10.3%
<b>Totally</b>	<b>100.0%</b>	<b>100.0%</b>
The study of innovations implemented, according to the production and market segments has shown that innovations are mostly implemented into the direction of production (61.4%).		

**Table 3.**

**Innovations implemented for production or market in 2013-2015**

Average (%)

	%
<b>Innovations for market</b> (innovative product/service is brought to the market earlier than competitors, though it may be already existing on other markets as well)	38.6%
<b>Innovations for production</b> (innovation product/service has been created, which had already been taken into the market by competitors)	61.4%
<b>Totally</b>	<b>100.0%</b>

Summarizing the spreadsheet analysis can make a conclusion. That introduction of innovations in the service sector is higher than in production; Most of the enterprises are individually innovating their innovations; In the face of an intensified competition, enterprises are bringing innovations that are already used on the market, and in this sense, the new business ideas will

**Table 4.**

**Marketing Innovations in 2013-2015**  
average (%)

	%
Important changes in product's esthetic design and package (except the changes of functional and customer characteristic of the product).	26.5%
Importing new media or technique for product promotion	24.6%
Importing new channels for allocating product or selling them	19.5%
New system of pricing of product/service	29.4%
<b>Totally</b>	<b>100.0%</b>

be financed, which will create a completely new demand on the market and will be able to implement the latest ideas.

**2.3. Innovative aspects of Ukraine-Georgia  
Energy Relations on the background of Association  
Agreement with the European Union**

**PAATA AROSHIDZE, GELA MAMULADZE**

**Actuality of problems:**

One of the main attributes of the real independence of the country is energy independence. In the modern world, it is difficult to obtain full energy independence, because countries that have many types of energy resources, work and carry out their transport and realization, so all countries are more or less dependent on various external factors. The relationship between foreign and domestic factors and how sustainable the country is against foreign and domestic fluctuations is that its economic and political success factors are determined.

The political and economic relations between Ukraine and Georgia are important in various aspects, especially the energy relations that are not de-

veloped at the level of other relationships, but it is possible to get some results and the possibility of future cooperation.

Energy is a prerequisite for social and economic well-being. Consequently, the main task of the energy strategy is to ensure the safe, clean and affordable energy of the Georgian population and business sector. In this respect, the main challenge of the energy strategy is not only the development of the energy system with the economic development of the country, but also the sustainable development of the sector with the increase of energy consumption. The priorities of the energy strategy are based on the analysis of potential opportunities for local energy resources and trade in regional energy markets. In addition, it envisages the objectives set by the country in terms of integration into the EU, which implies gradual approximation of the Georgian legislation with EU energy legislation / standards. Given this, it is important for the energy sector of the country's economic development and concurrence of the energy supply-demand balance of ways, as well, the main priorities ganszghvra, principles of sustainable development and environmental mitigation measures into account, which represents the country's technological, social And improving the level of economic basis [62].

Georgia and Ukraine have many common, first and foremost historical historical closeness, which is reflected in the fact that Georgia and Ukraine are the countries of post-socialist formation; As well as a tense political situation and a long-term "transitional economic situation". Against the background of such a whirlwind, the striving for the EU requires a variety of measures that will cover all areas of economy. Particularly important is the introduction of innovative economies in areas that are highly competitive and can provide substantial income for the country and ensure the stable development of countries in the rapidly changing conditions.

**Targets and assignments:** Discussion of energy relations between Ukraine and Georgia is especially important considering the innovative potential. The main goals of this month are: to demonstrate the potential of Ukraine and Georgia's energy potential;

- Determine the transit potential of these countries, which will diversify Russian oil and gas supply in Europe;
- Enact a new energy strategy taking into consideration the energy aspect of the Association Agreement with the European Union;
- Encourage development of energy cooperation between Ukraine and Georgia and increase capacity.

In the modern stage, the main objectives of the energy strategy of these two countries are derived from the threats and opportunities faced by the post-socialist capitalist countries. Problems, which have begun to gain independence, are often more urgent. Problems existing in the energy sphere were especially difficult for Georgia due to its results.

In the 90s of the last century the study of Georgia's transit potential started to coincide with the "Century Projects". Ukraine did not face such a dilemma because its transit and energy potential was still used during the Soviet Union.

Nowadays, it is the main strategic task for Georgia as well as Ukraine:

- Ensuring energy security;
- Creating a competitive environment in the energy sector;
- Development of energy sector on the basis of sustainable development principles.

In terms of transit and energy potential, these countries may have some parallels:

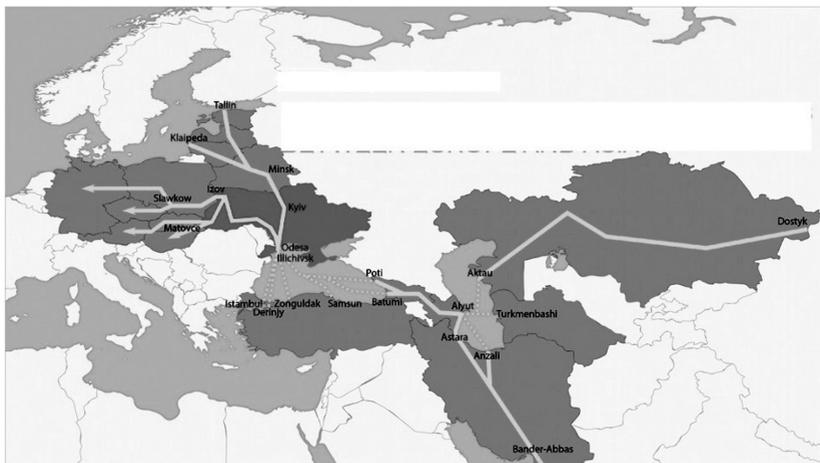
1. The two countries are a country with significant transit potential - throughout Ukraine, as well as Ukraine, as well as Georgia are the most important international trade routes. Better advantageous geographical location during the long years has strengthened the transit potential of countries. Nowadays Ukraine's main task is to fully utilize the transit potential of its country and turn Ukraine into an important transit country of the Eurasian continent. In order to achieve this goal, it tries to create favorable conditions for companies involved in the international logistics process both in

financial and infrastructural terms. In Ukraine the pipeline and transport corridors have been developed. Besides, multilateral transportation routes projects from Asia to Europe are discussed with foreign partners: rail transport - transfer via the Republic of Belarus to Lithuania, Latvia, Estonia and then the Baltic Sea, in Scandinavian countries; Shipping of goods from Poland to Illycheux to Poland; Shipments to Slavic, Czech, Austria, Serbia and Montenegro; Container shipments to the Logistics Center of Hungary; Ukraine also offers India and the Islamic Republic of Iran to engage in transit-transport networks that will ease cargo from Asia to Europe. In terms of transportation of cargo, Georgia is a transit region for Azerbaijan and Armenia, and transportation is carried out in Afghanistan, although not too often, because infrastructural conditions and ports do not allow transportation to Georgia through Afghanistan and Central Asia. If Georgia's ports will be able to receive large ships, it will simplify the shipping procedure and reduce costs. It is noteworthy that the cargoes of Afghanistan and Central Asia often traverse the Georgian ports and choose a different route for transportation, for example, from the Baltic ports. Then they use Russian Railways for transportation, as this railway is competitive, the timing of the goods is in place and the prices are relatively low. Opening of Akhalkalaki-Kars Railway will face a serious challenge to Georgia's ports, as soon as it ends, our ports are in great competition. Uninterrupted transportation of freight through railways will be available from Europe to Central Asia without any loading and transit service, which will save time and costs of shipping.

As Ukraine and Georgia, Georgia is a crucial transit country that connects Europe and Asia with each other and in many cases is the shortest way.

Drawing 1

Pipelines on the territory of Georgia and Ukraine



2. Oil and gas pipelines of international importance pass through the territory of the two countries. [63] - Oil transportation is transported by two pipelines - Baku-Tbilisi-Ceyhan Pipeline (BTC) and Western Route Export Pipeline (WREP). The Baku-Tbilisi-Ceyhan oil pipeline is exported to Azerbaijan-Azerbaijan-Chirag-Günyeshel oilfield in Turkey, Ceyhan Port. The Baku-Tbilisi-Ceyhan pipeline is the second longest pipeline in the world. Its length is 1768 km; Out of this 229 km pass through Georgia. The pipeline has 8 pumping stations, including two in Georgia. The oil transport of Baku-Tbilisi-Ceyhan pipeline started in 2005. Construction of the Western Route Export Pipeline, known as the Baku Supsa pipeline, is the first investment in Georgia by the International Oil Consortium and has been operating since 1999. The length of the West Route Export Pipeline is 830 km, diameter - 530 mm. The oil extracted from the Azeri-Chirag-Gunchesheel mine is carried out in Western Georgia, in particular, Supsa terminal. Construction of the Supsa terminal also took place within the pipeline construction. Sup-

sa terminal capacity is 120,000 tons. WREP's oil from Sanagchal terminal was released in December 1998, and in the summer of 1999 the first tanker was launched in Supsa terminal. Gas transit is carried out by two pipelines - SCP and North-South main gas pipeline. The South Caucasus pipeline, known as the Baku-Tbilisi-Erzurum gas pipeline, transports the gas from the Shah-Deniz field in Azerbaijan, Turkey. The length of the gas pipeline is 692 km, and the length of the section of Georgia is 249 km. The South Caucasus gas pipeline is largely parallel to the Baku-Tbilisi-Ceyhan pipeline. Gas pipeline was launched in September 2006 to test and operate the South Caucasus gas pipeline. In the same year, construction of a new, 12-kilometer pipeline connecting the pipeline with Georgian gas supply system was completed near Gardabani. After its launch, Georgia received the first gas from the pipeline in January 2007. The projectivity capacity of the pipeline is 20 billion cubic meters per year. The North-South gas pipeline was built in the 70s of the last century. The gas pipeline starts from the Georgian-Russian border and continues to Georgia-Armenia border (221 km), is possible to supply natural gas to Georgia and Armenia. "MCG" Under the project, the pipeline root rehabilitation 2006-2009 century. The project aimed at the pipeline reliability and efficiency increase of energy security, the pipeline gas losses are minimized and possible accidents are avoided. The project rehabilitated Line The projected capacity of the North-South Gas Pipeline is 12 billion cubic meters per year, with 4 international pipelines passing through Ukraine's total length of 3506 km, with a total capacity of 114 million tons per year. The country is Russia and Europe The main part of the Territory of Ukraine in the gas pipeline supplying natural gas to Germany, Slovakia, the Czech Republic, Austria, France, Swiss, Italy, Slovakia.

In Ukraine as well as in Georgia, international pipelines passing not only economic importance but also political and geopolitical significance.

**Table 1**

**Some international transit pipelines in Georgia and Ukraine**

	<b>Georgia</b>	<b>characteristics</b>		<b>Ukraine</b>	<b>characteristics</b>	
		Length (km)	Conductivity		Length (km)	Conductivity
<b>International oil pipelines</b>	Baku-Tbilisi-Supsa (WREP)	837	Terminal capacity 120 000 t.	Odessa-Brodsky - South Magisterial	667	14,5 mln t/y
	Baku-Tbilisi-Cheyhan (BTC)	1768	1 mln barrel/y	Transnistria Magisterial way		Terminal capacity 25 mln/t
				Tikhoretsky-Lisitsansky	185	34 mln/y
				Zhulin-Nadvornaya	110	2,23 mln t/y
<b>International gasolines</b>	Baku-Tbilisi-ErzerumShadeniz gasoline	692	16 bln cubic m/y	Orenburg-Uzhgorod		26 bln cubic m/y
	North-South magisterial gasoline	221	12 bln cubic m/y	Urengoy-Uzhgorod	1160	(28 bln cubic m/y

3. Both countries have political tension with the Russian Federation, which has its impact on strengthening transit energy potential - according to 2015 data, exports from Russia to Western Europe reached 103,04 billion dollars. Cubic meters, in the direction of Turkey - 27,01 billion cubic meters. In addition to Ukraine's gas pipelines in 2015, it was exported to 67.1 billion. Cubic meters natural gas. Without the transit potential of Ukraine, Russian gas exports will be reduced by 43%.

- The two countries are involved in the energy component of the Association Agreement with the European Union - Association Agreement with the European Union implies complex reforms by implementing EU directives in the energy sector. The gradual implementation of the Association Agreement requirements can be made in the form of Association or Energy Union (EC).

The threats of economic and political dependence on Georgia and Ukraine's energy security and the countries of the region are as an external energy dependence as well as the internal institutional and legislative environment. Joining the energy union is an instrument of introducing internal reforms and a new level of energy development in terms of these problems, political and energetic solidarity. Within the frames of energy union negotiations, the country has already achieved significant compromises. The non-use of this mechanism and the removal of reforms threatens the implementation of the Association Agreement, doubts the country's European choice and the maturity of the internal political process; Thus lowering Western support, perspectives for implementing the country's independent development and strategic energy projects. Thus, the implementation of energy reforms and internal market mechanisms is a common benefit for the two countries. According to the National Security Concept, European integration and implementation of strategic energy projects represent national interests.

Development of regional transport and energy projects is one of the priority directions of Georgia and Ukraine. Since 2005, the energy cooperation has begun to take off the submarine cable linking the Ukrainian energy system to the Black Sea, but this action has no consequences [64]. Signing the Association Agreement with the European Union creates new opportunities for energy cooperation between Georgia and Ukraine. Taking into consideration the general aspects, cooperation in the energy direction will be based on the co-operation within the EU energy union and on the other - innovative aspects.

According to the Strategy of Georgia, which will include 2017-2026 years, many innovative projects are planned, in our opinion, involvement of relevant state and private agencies in Ukraine will be profitable for the two countries. Between planned infrastructural projects, the underground gas storage is the best and cheapest way to improve the country's energy security parameters. In order to ensure continuous gas supply, Samgori's

southern arch basin is planned to construct an underground gas storage plant with an active gas capacity of 210-280 mln. Cubic meters and total volume - 400-500 mln. cubic meter. The mine is located 5-8 km away from the main pipeline network. The feasibility report of the project is prepared. By 2021, when the second phase of the “Shah-Deniz” deposit is enacted, the country receives considerable volume of gas will be ready for exploitation. [65]

Of the main gas pipelines of the gas flow to the pressure increase, if necessary, to ensure the supply of gas to the West, as well as a possible crisis, Azerbaijan’s north-western region customers, the project envisages the gas storage service connecting pipeline and compressor stations BIS access.

With the construction of underground gas storage in Georgia, the country will receive a strategic object.

As a result:

- The energy security of the country will significantly increase;
- To balance the sharp equilibrium of gas season-supply consumption with own resources, the cost will be significantly reduced;
- Monopolization of the sector is excluded by state companies of foreign countries;
- The prerequisites will be set up to meet the compulsory conditions for infrastructural and delivery standards relevant to the Association Agreement Agreement with Europe, as well as to facilitate the development of new transit projects in the territory of Georgia.v

It is noteworthy that the EU Regional Energy Summit (EU4ENERGY) was held in Tbilisi in 2017 with the first Regional Energetic Summit, through the summit “EU4Energy Management” embraced the regional dimension that helps the region’s countries in determining key regional energy projects in order to promote trade And delivery safety. Participants shared experiences related to the development of energy sector, discussed issues of energy markets and expected reforms in Georgia within the framework of the Energy Community Cooperation, as well as the benefits of these reforms

in transparent energy cooperation. EU4Energy is a four year program of EU technical support launched in June, 2016. EU4Energy's 3rd component - "Legislative and Regulatory Environment and Key Energy Infrastructure" - is financed by the EU and co-financed and executed by the Secretariat of the Energy Community and the Secretariat of the Energy Charter. It aims to improve the legislative and regulatory framework for energy and define key strategic energy infrastructure projects. The initiative includes six countries - Moldova, Ukraine, Armenia, Georgia, Azerbaijan and Belarus.

Innovative aspects of energy cooperation between Georgia and Ukraine can be expressed in the implementation of long-term energy projects, which is necessary for Georgia and requires Association Agreement with the European Union. Namely:

1. In September 2010, Ukraine joined the Energy Community Agreement and took a number of commitments to implement reforms in the energy sector, including the EU internal energy market and energy legislation. It was implied that the full implementation and acceptance of the provisions of the Energy Union Agreement would provide a competitive, transparent and predictable market in Ukraine that would facilitate investment and provide energy efficiency. It should be noted that in 2013 the membership of Ukraine in the energy community was endangered. Despite the fact that Ukraine had already begun fulfilling its obligations, the uncertainty about the energy sector reforms has deteriorated the country.

Ukraine's energy sector faces unprecedented challenges, ranging from relatively expensive fuels to fuel, ineffective infrastructure and market. Ukraine's electricity infrastructure is outdated and its condition is deteriorating: Many power plants operate beyond their technical capacity, low efficiency. Although electricity is relatively inexpensive, the environment and the health of people. Electric power stations in West Ukraine export electricity to EU member states, including Hungary, Slovakia and Romania. However, these countries do not operate similar parameters of power plants.

The largest share of electricity generation in Ukraine comes from atomic power plants and coal thermal plants, the share of HPPs is small; Ukraine is facing big challenges due to the expulsion of overdue power plants; No coal-fired plant has no control over the contamination, and concrete particle emissions exceed the EU's major pollutant directives norms 45 times; The quantity of energy spent in Ukraine is three times higher than the GDP per capita producing, and the average amount of EU per capita, and the highest carbon emissions per capita in Europe; Despite losses, carbon-based stations sell electricity at very low prices at the expense of state aid. In order to overcome these challenges, a single consistent policy that provides environmental and social protection measures, preventing the impact of hazardous energy sources for health. At the same time, this policy should attract large-scale and long-term investments to ensure modernization, sustainability, security and competitiveness of the sector.

2. Energy Efficiency - One of the most problematic issues in the energy sector in Ukraine is old coal power plants, lack of technical service and limited investment for many years. The system is inferior to the high content of the ashes produced during the Ukrainian coal combustion, which in turn requires increased costs for their placement. In recent years, some investments and technological upgrades have improved some of the power plants, but energy efficiency continues to remain a priority, since Ukraine is one of the most energy-intensive industrial countries in the world. And energy efficiency is the best way to improve energy security. The EU Energy Union is a very low target of energy efficiency for member states (9% by 2020), improved energy efficiency is essential for growth and development of Ukraine and environmental protection.

The Ukrainian government, as the Energy Community Treaty, the member has made a commitment to comply with EU directives, including the directive for combustion in large enterprises from certain types of pollutants emission in the imposition of restrictions on (LCPD), which until 2018,

should be implemented, as well as industrial emissions directive on the 133, which is the deadline set by the 2027 YEAR I have been mentioned. The final implementation of these directives will have a positive impact on the reduction of pollution, since directives require dramatic reductions in emissions from Ukraine's coal-fired power plants. According to the Energy Agreement Agreement, Ukraine should either renew power plants by 2018 so that they would be in compliance with the EU LCPD Directive or shut down them. The decision of the Council of Ministers was adopted in October 2013 in order to extend the term, but to comply with the requirements that Ukraine will be compatible with Industrial Emissions Directive (IED) by 2027. According to the Energy Association survey, the value of investments intended for IED does not exceed the amounts required to deal with LCPD, which gives the Contracting Parties the stimulus to comply with IED. In October 2013, according to the decision, the power IED- with 2027 year to ensure compliance, countries can develop a national emission reduction plans (NERPs), a tool that will allow power plants IED-'s compliance with the operating method NERP gives more time for implementation than the LCPD requirements which the energy c A single contract provided, however, the emission limit is more stringent. NERP implies that instead of emission reduction trail for each station, the reduction of emissions from thermal power stations across the country will be made according to the predetermined trajectory. Countries that do not want to ensure that all stations are in compliance with EEC can bring the number of emissions up to the average, through the factories and stations that are modern and easier to modernize, while large pollutants will be able to retain emissions reductions. Another option is the opt-out, which will not be covered by NERP, will be allowed to work at a maximum of 20,000 hours after 2018. The work of these stations could be three years full schedule, or have been In the cold reserve, maximum of 2023 years. The only country that has prepared the NERP project is Ukraine, which at the same time requested to extend the IF period from 2027

to 2033, 40,000 hours of opt-out scheme instead of the proposed 20,000 hours and the closure of the stations until 2030 2020 . In this way, Ukraine wants to continue the usual business in implementing IED so that it does not come into conformity with LCPD. The Permanent High Level Committee suggested that the Council of Ministers support the extension of the deadline for Ukraine, so that the Commission can submit a formal decision and receive a written procedure.

3. At the request of the Association Agreement with the European Union, the country must have strategic supplies, including gas reserves. The underground gas storage must have all the countries that depend on imports. Moreover, Georgia, which depends on 100% imported gas.

The construction of the gas storage plant in Georgia is planned in the first half of 2018. At the first stage of the construction two drillers will be drilled. As a result of the works, additional geological information will be received and technical parameters of the storage will be specified. The construction of Samgori gas station will be completed by 2021. At this time, gas volumes to be exported from Shah-Deniz gas pipeline to Georgia will increase significantly.

Finally, we can say that energy relations between Georgia and Ukraine should not be derived from the EU Energy Agreement and based on innovative approaches. This promotes the reality that Georgia and Ukraine are important countries with significant energy transit potential, both of them signed the Association Agreement with the European Union and the projects that are planned at the state level in Georgia must be carried out by the monopoly of the Ukrainian capital. This will benefit both Georgia's economic development, as well as the growth of Ukrainian investment abroad.

## REFERENCES

- [http://www.economy.ge/uploads/ecopolitic/2020/saqartvelo\\_2020.pdf](http://www.economy.ge/uploads/ecopolitic/2020/saqartvelo_2020.pdf)
- Long-term economic development concept of Georgia, pg. 5 [http://bag.ge/file.helix-  
?i=499677ad-dbe6-49cf-ac6d-a08f1703f61c&r=P](http://bag.ge/file.helix?i=499677ad-dbe6-49cf-ac6d-a08f1703f61c&r=P)
- [www.geostat.ge](http://www.geostat.ge); [www.data.worldbank.org](http://www.data.worldbank.org); [www.tradingeconomics.com](http://www.tradingeconomics.com)
- <https://ka.wikipedia.org/wiki/Georgia> <https://ka.wikipedia.org/wiki/Ukraine>
- [http://www.ipress.ge/new/5272-msoflio-banki-ukrainis-75ian-mshps-dacemas-utsi-  
nastsarmetyvelebs](http://www.ipress.ge/new/5272-msoflio-banki-ukrainis-75ian-mshps-dacemas-utsi-nastsarmetyvelebs)
- Mutual agreements between Georgia and Ukraine [http://mfa.gov.ge/MainNav/Foreign-  
Policy/InternationallegalAgreements.aspx](http://mfa.gov.ge/MainNav/Foreign-Policy/InternationallegalAgreements.aspx)
- Long-term economic development concept of Georgia, Business Association of Georgia  
2013, pg. <http://bag.ge/file.helix?i=499677ad-dbe6-49cf-ac6d-a08f1703f61c&r=P>
- [https://bpn.ge/ekonomika/30485-msoflio-banki-2017-tsels-saqarthvelos-ekonomiku-  
ri-zrda-52-s-sheadgens.html?lang=ka-GE](https://bpn.ge/ekonomika/30485-msoflio-banki-2017-tsels-saqarthvelos-ekonomiku-ri-zrda-52-s-sheadgens.html?lang=ka-GE)
- [www.geostat.ge](http://www.geostat.ge)
- [www.geostat.ge](http://www.geostat.ge)
- Encyclopaedia of World History, 2009, 2010, Publishing House “ELFI”
- Программа социально-экономического развития Украины 2036
- [http://www.middleclass.org.ua/programma-sozialno-economycheskogo-razviti-  
ya-ukrainyi-2030/](http://www.middleclass.org.ua/programma-sozialno-economycheskogo-razvitiya-ukrainyi-2030/)
- Entrepreneurship in Georgia, Statistic Publication, Tbilisi 2017, pg. 22. [http://www.geostat.ge/cms/site\\_images/\\_files/georgian/Mewarmeoba%20sakrtveloshi%202016.  
pdf](http://www.geostat.ge/cms/site_images/_files/georgian/Mewarmeoba%20sakrtveloshi%202016.pdf)
- Kharaishvili E.**, Competition and Competibility Problems in Agro-Food Sector of Georgia, Tbilisi 2011
- Kharaishvili E.** Comparative Analysis of Development of Agriculture in Georgia and Israel, Academic Seminar in Ben Gurion University, Israel, 2018.
- Kharaishvili E.** Challenges for sustainable food security in Georgia, XV EAAE Congress in Parma: Towards Sustainable Agri-Food Systems: Balancing between Markets and Society, Parma, Italy, 29 August – 1 September 2017.

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

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Economic Review 2016. [http://www.economy.ge/uploads/publications/economy\\_8484723758fdf66e4c9332.50742461.pdf](http://www.economy.ge/uploads/publications/economy_8484723758fdf66e4c9332.50742461.pdf)

**Kharaishvili E.**, Wine Market and Competition Models of Wine and Vine Growing in Georgia, Tbilisi 2017, pg. 111.

**Kharaishvili E.**, Demand for Georgian wine and evaluation of factors of competition priority of Vine and Wine growing sector, magazine „Economy and Business,” Volume IX.

Statistics as of 10 months of 2010;

Data of the Ministry of Agriculture of Georgia <http://www.moa.gov.ge/>

[www.geostat.ge](http://www.geostat.ge) [http://commerciant.ge/?view=post&id=125423&lang\\_id=ge](http://commerciant.ge/?view=post&id=125423&lang_id=ge)

**Abzalava A.**, Global-Innovative problems of Economy and Business, Tbilisi, 2014, pg. 8  
Andreanne Léger, Sushmita Swaminathan, „Innovation Theories: Relevance and Implications for Developing Country Innovation“, Berlin, November 2007. pp. 1.

**IOAN LALA POPA, GHEORGHE PREDA, MONICA BOLDEA**, THEORETICAL APPROACH OF THE CONCEPT OF INNOVATION, <https://econpapers.repec.org/paper/bbuwpaper/29.htm>

**Peter F. Drucker, P. F.** (1999). Management Challenges for the 21st Century. <https://www.amazon.com/Management-Challenges-Century-Peter-Drucker/dp/0887309992>

Innovative Activity and Firm Characteristics - A Cluster Analysis with Firm-level Data of Swiss Manufacturing Spyros Arvanitis and Heinz Hollenstein. 25th Annual Conference of the European Association for Research in Industrial Economics Copenhagen, 27-30 August 1998. <http://www.oecd.org/sti/inno/2093692.pdf>

**Schumpeter, J.A.**, 1934 (2008), The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle, translated from the German by Redvers Opie, New Brunswick (U.S.A) and London (U.K.): Transaction Publishers.

**Maxim Kotsemir, Alexander Abroskin** INNOVATION CONCEPTS AND TYPOLOGY – AN EVOLUTIONARY DISCUSSION BASIC RESEARCH PROGRAM WORKING PAPERS SERIES: SCIENCE, TECHNOLOGY AND INNOVATION WP BRP 05/STI/2013.

**CHAPTER 2. PRIORITIES OF SOCIO-ECONOMIC DEVELOPMENT OF GEORGIA  
AND UKRAINE: INNOVATIVE APPROACHES AND PERSPECTIVES**

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---

- Linton J.** 2002. Implementation Research: State of The Art and Future Directions // Technovation, Vol. 22, No. 2, pp. 65–79
- Cooper J.R.** (1998). A Multidimensional Approach to the Adoption of Innovation // Management Decision, Vol. 36, No. 8, pp. 493–502.
- Barnett H.G.** (1953). Innovation: the Basis of Cultural Change // New York: McGraw Hill.
- Drucker P. F.** (1985). Innovation and Entrepreneurship // Heinemann, London
- O’Sullivan D., Dooley L.** (2009). Applying Innovation // Sage Publications, Inc
- Drucker P. F.** (1985). Innovation and Entrepreneurship // Heinemann, London.
- Aiken M., Hage, J.** (1971). The Organic Organization and Innovation // Sociology, Vol. 5, No. 1, pp. 63–82.
- AIKEN, M., J. HAGE** . 1968. ‘Organizational Interdependence and Intra-Organizational Structure’, American Sociological Review, Vol. 33 (December): pp. 912-930.
- Rasul F.** (2003). The Practice of Innovation—Seven Canadian Firms in Profile // Industry Canada. **SIMON, J. L. and L. GOLOMBO** . 1967. ‘The Spread of a Cost-Free Business Innovation’, The Journal of Business, Vol. 40 (October): pp. 385-392 .
- OECD (1995). Proposed Standard Practice for the Collection and Interpretation of Data on the Technological Balance of Payments // Paris, OECD.
- Abzalava A.,** Global-Innovative Problems of Economy and Business, Tbilisi, 2014, pg. 8 .
- Otinashvili R.,** Innovative Education and Business Competition 195.<https://drive.google.com/file/d/0B3PZSQNPT43SMTM0NzdkZDgtZjJhNC00NjE1LTljNmUtN2Y0YTJjOGZjZTYw/view>
- A. Tvaltchrelidze., A. Silagadze., G. Keshelashvili, D. Gegia,** Program of Social-Economy of Georgia, Volume 7, Tbilisi, 2011. <http://www.nplg.gov.ge/gsd/cgi-bin/library>
- Харашвили Э.,** Факторы, приоритеты и перспективы инновационного развития агробизнеса в Грузии, III МЕЖДУНАРОДНАЯ НАУЧНО - ПРАКТИЧЕСКАЯ КОНФЕРЕНЦИЯ «Стратегические императивы современного менеджмента» (СИСМ-2016), 17 - 18 марта 2016. [http://kneu.edu.ua/en/university\\_en/subdivisions/editional/](http://kneu.edu.ua/en/university_en/subdivisions/editional/)

**Shatberashvili O., Kochoradze G., Tsatsanashvili M.**, Innovative Policy in Georgia: recommendations to the Government of Georgia, pg. 1. [http://eapnationalplatform.ge/admin/editor/uploads/files/publications/Policy%20Paper\\_WG2\\_Inovacia.pdf](http://eapnationalplatform.ge/admin/editor/uploads/files/publications/Policy%20Paper_WG2_Inovacia.pdf)

**Itshik Moshe**: only the export of idea in Israel annually gains 5 billions: <http://www.bm.ge/ka/article/icik-moshe-israelshi-yovelwliurad-mxolod-ideis-eqsporitit-5-mil-iardi-shemodis/393>

Innovation for Development A DISCUSSION OF THE ISSUES AND AN OVERVIEW OF WORK OF THE OECD DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INDUSTRY May 2012

**Kharaishvili E.**, Farm Diversification and the Corresponding Policy for its Implementation in Georgia, World Academy of Science, Engineering and Technology - ICEM-BIT 2015 : International Conference on Economics, Management of Business, Innovation and Technology - Economics and Business Sciences Conferences in Italy (Dublicat), 5-6 May, 2015. [www.waset.org/conference/2015/05/rome/ICMORE](http://www.waset.org/conference/2015/05/rome/ICMORE)

THOUGHTS ON THE ROLE OF GOVERNMENT IN INNOVATION David Sandalow Assistant Secretary for Policy & International Affairs U.S. Department of Energy Yale University October 21, 2011.

<https://idfi.ge/ge/georgia-in-innovations-global-index>

**PAPIASHVILI T., CILOGLU I.**, Innovation and Small Business in Georgia, 7th Silk Road International Conference “Challenges and Opportunities of Sustainable Economic Development in Eurasian Countries”. <file:///C:/Users/Admin/Downloads/192-340-1-PB.pdf> gv. 161.

<https://matsne.gov.ge/ka/document/view/1152405>

Natinoal Statistics Service, Innovative Activity of Enterprises <https://www.google.ge/search?q>

**Kharaishvili, E. , Gechbaia B.**, Wine Brand and Wone Tourism Development Perspectives in Georgia Journal Innovative Economics and Management, T. 3, Volume IV, 2017.

**Kharaishvili E.**, Challenges for sustainable food security in Georgia, XV EAAE Congress in Parma: Towards Sustainable Agri-Food Systems: Balancing between Markets and Society, Parma, Italy, 29 August – 1 September 2017.

## CHAPTER 2. PRIORITIES OF SOCIO-ECONOMIC DEVELOPMENT OF GEORGIA AND UKRAINE: INNOVATIVE APPROACHES AND PERSPECTIVES

---

---

**Харашвили Э.**, Факторы, приоритеты и перспективы инновационного развития агробизнеса в Грузии, III МЕЖДУНАРОДНАЯ НАУЧНО - ПРАКТИЧЕСКАЯ КОНФЕРЕНЦИЯ «Стратегические императивы современного менеджмента» (СИСМ-2016), 17 - 18 марта 2016. [http://kneu.edu.ua/en/university\\_en/sub-divisions/editorial/](http://kneu.edu.ua/en/university_en/sub-divisions/editorial/)

Инновационные кластеры nanoиндустрии / Г.Л. Азоев [и др.]. – М.: БИНОМ. Лаборатория знаний, 2012. – 296 с.

THE CONSEQUENCES OF CRISIS OF UKRAINE AND ECONOMIC RELATIONS OF GEORGIA-UKRAINE FOR GEORGIA [HTTP://REGIONAL-DIALOGUE.COM/ECONOMIC-RELATIONS/](http://REGIONAL-DIALOGUE.COM/ECONOMIC-RELATIONS/)

ПРОГРАММА социально-экономического развития Республики Беларусь на 2016 – 2020 годы, [http://www.government.by/upload/docs/program\\_ek2016-2020.pdf](http://www.government.by/upload/docs/program_ek2016-2020.pdf)

Внешнеэкономическое сотрудничество Украины: состояние, перспективы развития, угрозы и риски <http://bintel.com.ua/ru/article/vneshekonom/>

Экономика Украины, <https://ru.wikipedia.org/wiki/>

КОНЦЕПЦИЯ И МОДЕЛЬ ЭКОНОМИЧЕСКОГО РАЗВИТИЯ ДЛЯ УКРАИНЫ [https://zn.ua/ECONOMICS/kontsepsiya\\_i\\_model\\_ekonomicheskogo\\_razvitiya\\_dlya\\_ukrainy.html](https://zn.ua/ECONOMICS/kontsepsiya_i_model_ekonomicheskogo_razvitiya_dlya_ukrainy.html)

Strategy for Energy Development of Georgia, Tbilisi, 2016-2025

Газотранспортная система Украины [http://mapexpert.com.ua/index\\_ru.php?id=67&table=news](http://mapexpert.com.ua/index_ru.php?id=67&table=news)

Resolution of Government of Georgia, # 269, 30/06/2015

History of Development of Energy of Georgia, Tbilisi, 2016

## CHAPTER 3.

### INNOVATIVE DEVELOPMENT IN THE XXI CENTURY: FACTORS AND RESOURCES

#### 3.1. Strategic priorities of innovative development of institutional architecture of economy of Ukraine and Georgia

Ukraine and Georgia are now undergoing a complex stage of social transformation, which is complicated by the events of defending and forming statehood, carrying out large-scale, profound economic reforms and comprehensive modernization. The content of reforms is connected with systematic changes in the institutional order, which necessarily leads to the formation of effective institutional and innovative structures. Active reforms in macroeconomic policies have demonstrated the importance of changes in modern investment decision-making technologies. However, it is particularly important that the fundamental conflict between politically motivated short-term expediency of investment incentives for the formation of innovation infrastructure and the implementation of innovation projects as well as the long-term effectiveness of macro-regulators remains unresolved, despite numerous attempts to transform macroeconomic policies. Institutional rules are increasingly being seen as an integral element of the design of a macroeconomic policy mechanism that is geared towards transparency, accountability and long-term effectiveness of innovation development institutes.

Determining priority directions of innovation development of Ukraine and Georgia, which both experience political and economic unrest, despite the revealed symptoms of unstable growth, is a quite difficult task that involves solving a series of complex theoretical and methodological problems

complying with general strategic and tactical development of economic policy. Setting a strategic priority means getting a fairly accurate picture of how to manage innovative development before and after a certain period. This interval is usually fixed in the process of planning necessary institutional arrangements relating to various areas of innovation activity. In addition, it should be noted that the institutional and organizational structure of the economy affects both the efficiency of production of innovative products and their development, which has become very important for knowledge-intensive industries of Ukraine and Georgia.

The theoretical etymology of institutional rules is closely associated with the development of a new classical macroeconomics and various macroeconomic and policy-institutional interpretations of the positive and normative conclusions of evolutionary theory. It should be noted that the evolutionary theory, explaining the content of economic transformation, is aimed at studying the peculiarities of the economy that technologically progresses and is based on a set of program measures, their content and resource support, including finances.

The program sets diversity to an economic system and determines its capabilities. Implementation of the program measures may be subject to resistance or misperception of agents. Therefore, it will be necessary to determine in what way and if it is worth overcoming the resistance and how important it is for the strategic priorities of innovation development.

The sustainability of the management of the innovation development program is achieved by strict adherence to the following principles: the purpose, the area of efforts application, the functional content of the system, the cost of the action, the time of operation, i.e. implementation of specific measures. Instability is a vivid sign of dysfunctional planning and implementation of innovative programs, with strategic national innovation priori-

ties remaining only on paper, that is, it is impossible to solve the problem of putting them into life.

Judging on the effectiveness of innovation programs is possible only on the basis of a system of quantitative and qualitative indicators. However, coordinating programs is the most important aspect, which is not achieved today due to the lack of general imperatives and planning principles in the country. At the same time, not only innovative development programs require a scientific approach to planning, but the so-called macroeconomic stabilization programs should be linked to other goals and programs, which also implies the existence of a sound algorithm.

Innovative development is primarily determined by the successes of the economy transformation. The idea of innovative development, which is a non-alternative long-term development strategy of the economies in transition, should dominate state conceptions of development.

Characterizing conceptual foundations of the institutional provision of innovative development of Ukrainian and Georgian economies, one should mention that systematic and purposeful measures and regulators for the reasoned and consistent formation of an innovative economy have not been developed yet. It means that there are a set of priority principles, models and regulators for the implementation of long-term goals that ensure the coordination of interests, forms of methods and tools of managerial influence with a maximum consideration of globalization challenges<sup>1</sup>.

The study of the world practice makes it possible to identify the following scenarios of innovative development of economies: economic inertia, mobilization, capitalization, modernization. The inertia scenario is to leave everything unchanged or follow the line of one of the world's leaders. The

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1 Kyrychenko, O. A. (2011). Innovatsiynny rozvytok ekonomiky v konteksti suchasnoyi teorii modernizatsiyi [Innovative economic development in the context of the contemporary theory of modernization]. *Ekonomika ta derzhava*, 7, 13-16 [in Ukrainian].

mobilization scenario implies the use of its own resources to address socio-economic development problems and its long-term development outcomes may be effective only in case of high social mobilization in gradual increase of its own innovative potential<sup>2</sup>.

Prospects for innovation development of Ukraine and Georgia, of course, are determined by a large set of factors: external and internal, economic, political, social and civilizational. Economic policy, in turn, acts as the initiator of institutional change. The latter also depend on the previous state of the institutional structure. Previous institutional structures are formed in accordance with economic policies based on other theoretical principles. Thus, institutes act as a kind of interconnection. It follows that there is no economic policy that is not dependent on the results of the previous one<sup>3</sup>. This greatly complicates the implementation of the economic policy of innovation development of the economy.

The determining factor in the theory of institutionalism is that the country's economy is the only national economic complex, a system in which the movement of any component is the movement of a part of the whole and determined by it. The approach to the economy as an integral system of the institute, in our opinion, actually gives the opportunity to develop the concept of innovation development. A radical transformation of productive forces, scientific and technological progress, intellectual property and labor are the main means in implementing the strategy of innovation development.

System research on the innovative development of the economy of Ukraine and Georgia is carried out by many well-known scientists. The con-

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2 Zhelyuk, T. L. (2010). Modernizatsiya systemy upravlinnya dovhstrokovym rozvytkom natsional'noyi ekonomiky [Modernization of the management system for the long-term development of the national economy]. *Aktual'ni pytannya ekonomiky*, 3, 55-61 [in Ukrainian].

3 Nørgaard, O. (2000). *Economic Institutions and Democratic Reform: A Comparative Analysis of Post-Communist Countries (Economies and Societies in Transition)*(Economies and Societies in Transition). Cheltenham: Edward Elgar Publishing Limited. [in English]

viction that the scientific substantiation of the essence of the structural issues of Ukraine and Georgia, its nature and form, the prospects for overcoming negative tendencies in the innovative development of the national economy have already been formed. Unfortunately, there is a deep gap between the views of scholars on the nature of trends, their patterns, systemic causes of problems and recommendations on economic policy and feasibility of their implementation by the state power institutions.

Taking into account the prospects for economic growth and the strategic task of achieving the level of innovative development of developed countries, one can assume that a country with a transformational economy will be able to support the growth rate of GDP 2-3 times higher in the long run at the stage of restoration of the world economy after a prolonged recession<sup>4</sup>.

Each country in the world chooses its own innovative development policy. The tools of this policy can be represented by “programs, organizations, rules, regulations and regulations with an active involvement of the public sector that have a purposeful or indirect effect on innovation processes”<sup>5</sup>. In practice, the implementation of innovation policies should be provided by a variety of institutions and agencies. Among them there are numerous agencies belonging to different jurisdictions. Management of the formation

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4 Heyets, V. M., Panchenko, Ye. G. & Libanova E. M. (2003). *Ekonomichne zrostantannya v perekhidnyy period* [Economic Growth in Transition]. In V. M. Heyets (Ed.), *Perekhidna ekonomika [Transition Economics]*. Kyiv: Vyscha shkola [in Ukrainian].

5 *Innovatsiyi v Ukrayini: Yevropeys'kyy dosvid ta rekomendatsiyi dlya Ukrayiny* (Innovatsiyi v Ukrayini: propozytysiyi do politychnykh zakhodiv ed., Vol. 3, Ostatochnyy variant (proekt vid 19.10.2011 «Proekt ES «Vdoskonalennya stratehiyi polityky ta rehulyuvannya innovatsiy v Ukrayini»)) [Innovation in Ukraine: European Experience and Recommendations for Ukraine. Innovation in Ukraine: suggestions for policy measures ed. The final version (project from 19.10.2011 “EU Project “Improving the Policy Strategy and Regulating Innovation in Ukraine””)]. (2011). Kyiv: Feniks. Retrieved from [https://kneu.edu.ua/userfiles/our\\_partners/gudrun/3\\_UA.pdf](https://kneu.edu.ua/userfiles/our_partners/gudrun/3_UA.pdf) [in Ukrainian].

of an innovative economy in Ukraine is carried out by various ministries and committees, none of which is responsible for innovation policy as the only representative of the government. Specialized government institutions and agencies are subordinated to various ministries, and this fact increases the risk of shredding and fragmentation, which leads to a complication of policy coordination in the area of scientific research, development and innovation. Despite the fact that the Ministry for Education and Science is responsible for the development and implementation of the state policy in the spheres of science, technology and innovation, the latter is also one of the tasks of the Ministry for Economic Development and Trade of Ukraine.

Taking into account the recommendations outlined in the EU project “Improving the policy strategy and regulation of innovations in Ukraine” with regard to “smart management” of an innovative economy, we believe that while conducting reforms, Ukrainian government should consider the coordination of the development of innovation policy between different institutes. This would eliminate duplication and inconsistency of tasks and interests between ministries and departments. Thus, in addition to “narrow” government programs, institutes should be given “wide” tasks and the quality of their implementation and compliance with the ultimate goals has to be controlled at each stage.

The experience of different countries of the world shows that the economy is most successful in those countries that were able to build the institutional structure of the innovative economy on the basis of traditional values, norms and rules of social life, which was clearly manifested in the examples of modernization of Germany, Japan, South Korea, China, etc. The institutional structure of the model of innovation development can be defined as the totality of basic and innovative institutes of economy and society functioning in their integral unity, acquiring their own specificity in the national conditions of the state as a bearer of traditions, norms, rules of conduct, mentality, civilizational identity and unity, continuity, discreteness

and dynamism. The institutional structure in the historical retrospective is the result of the co-evolution of man and nature, within which the nature of the transformations of economic development is determined, particularly in its movement to modern types and institutional forms of a hierarchy as well as changes in the content of social needs.

The institutional structure of the innovation economy “is built on the foundation” of the basic institutions. Separation of basic and complementary institutes and institutional forms serves as a methodological tool for establishing interrelationships and interaction between different levels of economic aggregation of the innovation system. Institutional forms are the practical embodiment of basic institutes of innovation development at the level of a truly functioning economy of an innovative type.

The institutional structure in a broader sense has found its academic design in the direction of “institutional architectonics”. The term was introduced to the scientific circles by a team of prominent Ukrainian scholars: A. Gritsenko, V. Tarasevich, I. Malii and many others<sup>6</sup>. They are the founding fathers of a new scientific direction called “institutional architectonics”, which means a “fundamental structure of institutions consisting of rules, norms, stereotypes, traditions, institutions and other social entities in their relation to the essence and general aesthetic plan of constructing a holistic social system”<sup>7</sup>. Unlike the notion of “institute”, which is regarded as part of social and economic reality, architectonics as a concept by its very nature is a category of integrity. That is, it reflects the proportion of parts and the

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6 Arhireyev, S. I., Gritsenko, A. A., Malyy, I. Y., ... Chugunov, I. Y. (2008). *Institutsional'naya arkhitektonika i dinamika ekonomicheskikh preobrazovaniy: monografiya* [Institutional architecture and dynamics of economic transformations: monograph] (A. A. Gritsenko, Ed.). Khar'kov: Fort [in Russian].

7 Arhireyev, S. I. (2008). *Institutsional'naya arkhitektonika i dinamika ekonomicheskikh preobrazovaniy: monografiya* [Institutional architecture and dynamics of economic transformations: monograph]. [in Ukrainian]

whole. Accordingly, innovation development should be seen as an integral part of the institutional aspect. And, consequently, the institutional structure of the model of innovation development from the point of view of its architectonics is the integrity, integral unity of parts and the whole, which pass into higher innovative levels in the process of its evolutionary development.

The complexity of the research of the institutional structure of the model of innovation development can be explained by the processes and mechanisms of institutional changes, the search for ways of harmonizing various components of institutional systems in time and space. In the historical perspective, identifying the optimal structure of innovation development is a particularly challenging task. In developed countries, where innovation development had its own life cycle, it is impossible to speak about the nature of its constant system. A more complete set of institutional forms through the channels of evolution was built into the system of a higher hierarchy, acquired the character of systematic, integral implementation of the principles of innovative development embodied in effective economic policy. Co-evolution of economic policy of innovation development and such institutional forms as human capital, civilization factors, scientific and technological progress, arose under the following conditions: timeliness, regulatory and efficiency of their interaction; sufficient level of autonomy and interdependence of these institutions; the coherence of the force of their co-evolutionary influence. So, as a result of the co-evolution of economic and financial institutions and their institutional forms of manifestation, a sufficiently mature institutional structure of the model of innovative development has emerged.

The institutional structure is built on the basis of institutions. Separation of basic and complementary institutions and institutional forms serves as a methodological tool for establishing the relationship between the macro and microeconomic levels of the innovation-economic model of development. Institutional forms are a practical embodiment of basic institutions at the

level of a truly functioning economy<sup>8</sup>. Under the basic institutions, scientists understand the stable complexes of social relations, which formed during the historical development, established in the national culture and are transmitted as part of it, that is, have their own transmission mechanism of the innovative economy (the essence of which is subject to explanation within the framework of the theory of economic mechanisms of Hurwitz)<sup>9</sup>.

The peculiarity of institutes in the model of innovation development is that they are manifested through themselves as strategic and operational objectives of economic policy, rules and norms of economic activity and public initiative to improve the standards of the innovation system. Resilience to external influences is due to the ability of innovative systems and their elements to synchronize their actions based on a coherent decision-making process with the largest number of elements involved. In fact, it is the informational nature of interaction that is responsible for the effective management of the innovative economy. Developed countries have succeeded in institutional design due to the fact that they effectively use the factors of governance and organization of the innovative economy, which was emphasized by a well-known economist A. Marshall in his research<sup>10</sup>.

Institutions in developed countries play a leading role in identifying parameters of innovation development. The study of innovation development, organizations and institutions is interconnected and cannot exist separately. The current state of modern innovation economy is determined by the structure of rules and regulators, within which the mechanism of engaging an organizational resource in the direction of building effective organizational

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8 Arhireyev, S. I. (2008). *Institutsional'naya arkhitektonika i dinamika ekonomicheskikh preobrazovaniy: monografiya* [Institutional architecture and dynamics of economic transformations: monograph]. [in Ukrainian]

9 Hurwicz, L. (1960). *Optimality and Informational Efficiency in Resource Allocation Processes*. In K. Arrow, S. Karlin & P. Suppes (ed.), *Mathematical Methods in the Social Sciences* (pp. 27-46). Stanford: StanfordUniversityPress. [in English]

10 Marshall, A. (1993). *Printsiipy ekonomicheskoy nauki* [Principles of Economics] (Vol. 1,2,3, *Ekonomicheskaya mysl' Zapada*). Moscow: Progress [in Russian].

structures, interconnections of institutions as part of a national innovation system. Their reaction changes regulatory rules and procedures and reproduces the results that operate in the direction of the specified rules, procedures, and regulators through political processes<sup>11</sup>.

The results of empirical studies indicate that policy measures, especially those aimed at ensuring trade openness, macroeconomic stabilization and exchange rate management, do not have any independent influence on the parameters of innovation development being outside the context of the quality of national institutions. Strengthening the emphasis on the role of institutions is also the basis of the so-called “extended Washington Consensus”. However, these studies do not quite clearly define the role of organizational management function, the definition of organizational interaction and its place in innovation, in economic theory and in institutional theory from different positions.

In today’s conditions, the strategic objectives of Ukraine and Georgia are to increase the attention of all levels of management of the innovation system to the process of implementing organizational innovations, since the lack of modern methods of organizing innovation, adequate to the challenges of the external environment of organizational structures, negatively affects the dynamics of the implementation of state innovation policy and thus inhibits innovative development of economies.

Hence, the main mechanisms in the innovation-competitive vigilance of the state and its institutes are: forecast and anticipation of the needs of society, identification of their capabilities in order to implement them in the state’s innovation policy so that these needs can be satisfied and even surpassed; anticipation of the problems and threats of the future in order to eliminate their root causes today and minimize the negative effects in the future; prediction of the prospective technologies of the future and an ad-

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11 Sukharov, O. S. (2013). *Metodologiya i vozmozhnosti ekonomicheskoy nauki: monografiya* [Methodology and possibilities of economic science]. Moscow: KURS: INFRA–M [in Russian].

vance in creating their professional and technological basis today through the institutes of science and education; a progressive transition to a new technological mode of production under the prevailing conditions<sup>12</sup>.

In the context of the transition to an innovative economy, organizational changes determine the institutional readiness of the economy of Ukraine and Georgia to use organizational factors of development and increase the economic efficiency of production. Therefore, the task of improving existing and applying new methods and forms of organization of the innovation process, elements of the institutional mechanism at all levels of management of the innovative economy. An organizational platform that methodically represents a project on the implementation of a specific scheme of interaction, while containing only specific functions of the institutions of economic power on the basis of the institution of trust, which determine the limits of the success of the economic system, can be one of these forms of organization.

This trust is “the basis of complex-organized societies, where there are special organizations that generate and support” rules of the game” ...” Trust in specific “rules of the game” is projected to the trust in those organizations that create and implement these rules. Since the main “constructor” of institutes in modern society is the state, the trust in government is considered the most important aspect of institutional trust<sup>13</sup>.

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12 Moskalenko, O. M. (2014). *Teoriya i model vyperedzhayuchoho ekonomichnoho rozvytku v systemi suspilnykh stratehichnykh potreb: monohrafiya* [Theory and model of advanced economic development in the system of social strategic needs: monograph]. Kyiv: KNEU [in Ukrainian].

13 Nureyev, R. M. (Ed.). (2010). *Ekonomicheskiye sub'yekty postsovetskoy Rossii (institutsional'nyy analiz): desyat' let spustya* [Economic subjects of post-Soviet Russia (institutional analysis): ten years later](212th ed., Vol. 1: Rossiyskiye domokhozyaystva, Nauchnyye doklady: nezavisimyy ekonomicheskyy analiz [Russian Households, Scientific Reports: Independent Economic Analysis]). Moscow: Moskovskiy obshchestvennyy nauchnyy fond [in Russian].

With the formation of an innovative economy, government support is needed by all actors in the innovation process, due to the fact that innovation at all stages is risky. Risky innovative entrepreneurship requires high-quality regulations and laws to enable its activities and guarantees of transparent and fair “rules of the game” in business. The correlation between the level of institutional and interpersonal (interpersonal is the foundation of any society) trust can be treated as a kind of “thermometer of the health of the institutional environment.” Due to low personal and institutional confidence, social interaction in society is “paralyzed”, coordination actions are complicated by mutual distrust and the government is not able to control the situation. Innovative development, under such conditions, is almost impossible.

It becomes obvious that lack of trust in Ukrainian society is one of the reasons for the existing difficulties of the planned modernization and reform. The system of obstacles to the formation of the Ukrainian economy of innovation type includes: the absence of an effective legislation for regulating and stimulating innovation, complemented by the practice of constant changes and termination of certain articles of legislative acts in the fields of scientific and technological activities. Thus, the articles of the Laws of Ukraine “On Innovation Activity” and “On the Special Treatment of Investment and Innovative Activities of Technological Parks” were terminated, in which financial support and methods for regulating innovation were determined through the establishment of tax privileges. In Ukraine some articles of laws are not often implemented, for example, the amount of state financing of science.

Today, Ukraine’s innovative, as well as scientific and technical activities are controversial. On the one hand, science tries to separate itself from politics and ideology and meet the requirements of economic expediency in the process of adaptation and modernization. There are attempts to find a Ukrainian niche in the global market for innovative, scientific and technical products. On the other hand, there are a number of problems and negative

trends. These problems become particularly noticeable when compared internationally. Namely: levels and tendencies of financing meet neither the needs of Ukraine, nor the practice of leaders of the world economy. The gap between Ukrainian science and that of developed countries and even developing ones by the results of the implementation of discoveries and inventions, in the levels of innovation development, in the effectiveness of state scientific, technical and innovation policy is huge<sup>14</sup>. In 2015 4497 applications were registered in Ukraine, which is 813 units less than in 2010, patents for inventions were issued for less than 860 units in 2015 compared to 2010 and 305 units less in comparison with 2014. It means that all indicators showed a sharp fall. The analysis of Ukrainian institutional environment suggests that partner business relations between science, business and government have not developed yet, which is one of the obstacles for the transition to an innovative economy. The lack of the aforementioned relations leads to an insufficient financing of science by businesses and incomplete use of innovative potential by the Ukrainian economy. For example, in 2010-2015 there was a 1.09 million UAH decrease in funding for the implementation of scientific and technical work at the expense of the organizations of a higher education sector, 9.6 million UAH decrease in funding of private non-profit organizations and 93.68 million UAH – in funds of customers of foreign states.<sup>15</sup>

The partnership between unpromising business and limited in finance Ukrainian science is as impossible as business and science surviving on their

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14 Heyets, V. M., Semynozhenko, V. P., & Kvasnyuk, B. Y. (Eds.). (2007). *Stratehichni vyklyky XXI stolittya suspilstvu ta ekonomitsi Ukrainy: u 3-kh tomakh* [Strategic Challenges of the 21st Century for Society and the Economy of Ukraine: in 3 volumes](*Innovatsiyno-tekhnolohichnyy rozvytok ekonomiky ed. [Innovative and technological development of the economy ed.]*, Vol. 2). Kyiv: Feniks, p.17 [in Ukrainian].

15 *Naukova ta innovatsiyna diyalnist v Ukraini* [Scientific and innovative activity in Ukraine].(2016). Derzhavna Sluzhba Statystyky Ukrainy, *Statystychnyy zbirnyk*, 1-257.doi:10.18411/d-2016-154 [in Ukrainian].

own in an open market economy and competition. Establishing partnership between business and science with direct state participation and support can only be possible while developing a prospective innovation model of the Ukrainian economy<sup>16</sup>. The leading role in this process is the preserve of institutional environment, innovation infrastructure and the Institute of Human Capital.

Thus, the problems of institutionalization of innovation development are due to the fact that the competitiveness of national economies and companies is increasingly determined by the quality of the institutional environment, the ability to innovate, to perceive the latest technological advances on the basis of the use of institutional architecture of Ukrainian and Georgian economies, which allows a full use of its human, intellectual and social capital.

In order to change the situation for the better, it is necessary in the course of reforms, complex and system modernization to be aware of the ineffectiveness of the existing institutions of innovation development, the behavior of subjects in the process of institutional and structural reforms, their in-depth strategic and tactic problems that hinder the formation of the institutional architecture of the innovative economy of Ukraine and Georgia. The present-day realities convincingly testify to the need of understanding the institutional dimension of innovation economy, overcoming the existing “innovation pauses”, “institutional vacuum” and eliminating the institutional inertia of informal and formal norms.

The institutional approach provides the innovative development research with an interdisciplinary character and allows considering such development factors as social, political, demographic, psychological, cultural, religious and other ones. One cannot explain the innovative development of modern

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16 Heyets, V. M., Semynozhenko, V. P., & Kvasnyuk, B. Y. (Eds.). (2007). *Stratehichni vyklyky XXI stolittya suspilstvu ta ekonomitsi Ukrayiny: u 3-kh tomakh* [Strategic Challenges of the 21st Century for Society and the Economy of Ukraine: in 3 volumes],120.

economy without taking into account the traditions of the people, the nature and peculiarities of the political system, ethical norms, general and legal culture of citizens, the system of dominant values and other institutions of society.

Institutions within the framework of institutional theory appear in two aspects: as formal organizations and as patterns of behavior that can be approved or disapproved collectively (ethical norms, morals are institutions). Consequently, institutions can be interpreted as parameters of the economic system, which determine the “image” of the agent’s actions, their behavior model. Formation of institutions takes place in two scenarios: strong, i.e. self-organization of institutions and weak – the source of the institute, i.e. personality, behavior of individuals. Thus, it takes place under a certain design created by people, that is, in accordance with constitutional norms. Weak institutions set actions in the set limits, strong – motivate agents<sup>17</sup>.

Important elements of the macroeconomic policy of the formation of an innovative economy are formal institutions (for example, normative legal acts), the socio-economic essence of which, in terms of innovation development of the institutional architecture of the economy, is manifested in the following influences:

1. Integrative influence of the institutes, which by promoting consolidation of financial resources of the subjects of innovation activities ensure both the formation of the national innovation system and the stability of the national economy.
2. Information influence of the institutions means the accumulation, processing and transfer of specialized economic information, necessary for innovation activity as well as for combining the use of market forces opportunities and institutional capacity of the state.

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17 Sukharev, O. S. (2017). *Ekonomika global'nogo ekstsesa: instituty, finansy, razvitiye, politika* [The economy of global excesses: institutions, finance, development, politics]. Moscow: LENAND [inRussian].

3. Orienteering influence is manifested in the fact that institutions act as one of the tools for streamlining innovation through the establishment of rules of innovative behavior in accordance with existing informal norms and ensuring their implementation through incentive mechanisms and reward.

The mentioned influences of institutes promote optimization and increase of the efficiency of innovative economy structure in its search of the ways of stimulating innovative activity of an economy, formation of an institutional framework of an innovative type economy in the context of reforming technological modernization, global shifts and tendencies. The concept of “institutes” was proposed by the institution experts while analyzing the issue of economic power and control over economy. Institutes are considered as constraints that structure human relationships and are created by people themselves<sup>18</sup>. The representatives of economic institutionalism proposed a number of definitions of economic institutions<sup>19,20</sup>. In general, specific economic systems can be treated as economic institutions that have developed in society, with its structure, actors, regularities of functioning, which dictate certain rules of conduct and restrictions for all members of society. As for the national economy, economic institutions act as a legislative and coercive mechanism for its functioning.

The institutes whose activities are designed to ensure the sustainability of the economy and its innovative development include: fiscal, monetary,

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18 North, C. D., & Fogel, R. W. (1993, December 9). Economic Performance through Time. Lecture to the memory of Alfred Nobel. Retrieved from [https://www.nobel-prize.org/nobel\\_prizes/economic-sciences/laureates/1993/north-lecture.html](https://www.nobel-prize.org/nobel_prizes/economic-sciences/laureates/1993/north-lecture.html)

19 Commons, J. R. (2011). Pravovyye osnovy kapitalizma [Legal Foundations of Capitalism](*Ekonomicheskaya teoriya*) (A. Appolonov & A. Markov, Trans.). Moscow: Vysshaya Shkola Ekonomiki (Gosudarstvennyy Universitet), pp. 1-416 [in Russian].

20 Veblen, T. (1984). Teoriya prazdnogo klassa [The Theory of the Leisure Class] (*Ekonomicheskaya mysl' Zapada*) (S. Sorokina, Trans.; O. Radynova & V. Motylev, Eds.). Moscow: Progress, pp. 5-7 [in Russian].

banking and investment systems. This classification of institutes for the formation of an innovative economy is explained as follows:

- first, these systems are the main structure-forming systems of economic life, serving material and non-material production;
- second, these elements form the main levers of influence on economic growth, among which a price, interest, taxes and dividends can be mentioned;
- third, the dynamics of the functioning and development of these systems is one of the most important macroeconomic indicators that characterize the well-being of any economy. For a shock-affected economy, budget revenues and expenditures, investments in fixed assets, the size of the tax exclusion, the magnitude of the loan rate, the state of money circulation are important levers of the state to ensure vital functions of an economic system;
- fourth, the dedicated systems serve the innovation process<sup>21</sup>.

The impact of these institutions on the country's innovative economy and their role in ensuring the sustainability of its functioning are significant. Institutes of innovation economy are systems that have a significant influence on the "innovation field" for information, intellectual and material production, forming a holistic technological chain of innovation production, using innovative ideas and knowledge acquired in the process of cognition. The following institutes of innovation economy in the process of their interaction perform a number of common functions:

- providing all sectors of the economy with resources, creating optimal conditions for the movement of commodity and cash flows;
- regulating the distribution of resources, income, loans;
- creating conditions for economic management;
- establishing and developing economic relations;

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21 Boyko, A. V. (2014). *Stiykist natsionalnoyi ekonomiky: teoriya, metodolohiya, praktyka* [Sustainability of the national economy: theory, methodology, practice]. Kyiv: In-tekon. ta prohnouzuv. NAN Ukrayiny [in Ukrainian].

- increasing entrepreneurial activity and efficiency of borrowed funds;
- ensuring complex and system approach of economic and social policies;
- implementing the principle of social justice in order to ensure social guarantees and protection of citizens of the state.

In the process of the implementation of these functions, opportunities for the extended reproduction are formed, while in the real sector of the economy factors that streamline its structure and incentivize economic growth begin to operate. At present, the reason for the complexity of the institutions of the national economy sustainability is the fact that existing mechanisms for resource allocation are outdated, while the new ones have not been formed yet, besides, the system of income distribution is distorted in Ukraine<sup>22</sup>.

The institutional architecture of the economy of an innovative type is formed on the basis of norms and rules that comply with existing functions and interaction of institutes. The choice in favor of the economy of an innovative type, regardless of the degree of formation of corresponding institutional and structural changes, prompts the society to accelerate the formation of the whole system of modern institutions, that is, to build the levers of innovation development, the missing fragments in the architectonics now. The very beginning of the formation of the corresponding institutes works as a challenge for a national economy, which will lead to a certain reactionary response. A traditional market model in this case is not appropriate, because it will reproduce the “old” structure of the economy. The shift in the direction of high technology without the prior formation of institutes designed for innovation is simply impossible<sup>23</sup>. Consequently, the importance of the

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22 Heyets, V. M. (2009). *Suspilstvo, derzhava, ekonomika: fenomenolohiya vzayemodiyi ta rozvytku* [Society, state, economy: phenomenology of interaction and development]. Kyiv: In-tekon. ta prohozuv. NAN Ukrayiny [in Ukrainian].

23 Pakhomov, S. Yu. (2013). *Ekonomichne zrostannya v konteksti instyutsionalizmu* [Economic Growth in the Context of Institutionalism]. *Formuvannya rynkovykh vidnosyn v Ukrayini*,4, 11-16 [in Ukrainian].

choice of a modern institutional arrangement requires specification and consideration of those changes that are mandatory for a modern innovation economy. It is the institutions that determine the policy of reformism of the economies of many countries, including Ukraine and Georgia.

The policy of reformism is a policy of modernizing the economy, covering a large number of its areas, changing the basic set of public institutions. The modern economy has long become a well-established system of combinations of different programs and plans. Therefore, reformism is inseparable from institutional planning, the main purpose of which is to design the conditions for the formation of a state innovation policy.

We share the points of view of Hasanov S. I. and Syzonenko V. O., who assert that having an opportunity to choose between different types of innovation policy (technological push, market orientation, changes in the economic structure of the economic mechanism, social orientation), the level of Ukraine's economic development is most closely aligned with the policy aimed at changing the economic structure of the economic mechanism. Such a policy implies a significant impact of technological innovation on the branch structure of the economy and the implementation of low-cost and short-term innovation projects. An example of successful implementation of this policy is Japan and France. Scientists insist that long-term policy of structural shifts for Ukraine should include a clear definition of state priorities of socio-economic development taking into account the production and distribution efficiency of such shifts, fostering the formation and development of new competitive, science-intensive industries and manufactures. In addition, the change in the ratio of accumulation and consumption in favor of the former should become the key point in financing the innovative model of structural shifts<sup>24</sup>.

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24 Hasanov, S. S. (2014). *Finansuvannya strukturnykh zrushen' ta innovatsiynoyi modernizatsiyi* [Financing of structural changes and innovative modernization]. *Finansy Ukrainy*, 5, 20-29 [in Ukrainian].

Regarding the form of innovation policy, it has to match the Institute of Ideology of the Innovative Economy (conceptualized representations, ideas and views on innovation activities that reflect the interests of innovators, consumers of innovative products) with the economic regime of the innovation system. On the other hand – the economic laws of public consumption with the existing innovation policy. Social production is interconnected with the innovation policy and structure that are under a strong influence of innovative resources. It is the availability and level of the use of innovative resources that correlate the social production of an innovative product with the possible economic regime of the innovation sphere.

The economic regime in the institutional architecture of an innovative economy as an institutional framework for the practical organization of innovation in the structure of a national innovation system is characterized by the social production of an innovative product, conforming to the specific forms of innovation policy. This policy is implemented within the framework of specific institutes of innovation development. The economic regime of the innovation sphere, in terms of application, is realized in the form of economic regulations and is balanced by economic power within the framework of innovation activity of a certain institute of innovative development<sup>25</sup>.

The high quality and level of institutions contribute to innovative development, and rapid innovative growth facilitates the improvement of institutions. Due to this, the economy has a chance not to get into the “institutional trap” in case it can initiate an innovative growth. The quality of institutions stimulates innovation in the country and by this creates institutional capacity for a comprehensive and systematic modernization of the economy as a whole, and industrial units in particular. At the same time, institutional transformations must meet the specific conditions in which they occur, among

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25 Togunov, I. A. (2009). *Novoye v teorii organizatsii: fraktal'no-fasetochnyye modeli: monografiya* [New in the theory of organization: fractal-facet models: monograph]. Vladimir: Sobor, pp. 64-66, 68 [in Russian].

them: an innovative character requiring appropriate infrastructure support (for example, innovative hubs, specialized centers, techno parks involving co-working centers); increased requirements for the quality of human capital caused by changes in education, health care systems and other institutions that provide positive dynamics in improving living standards of society; a wider use of advanced technologies, hence a higher demand for them<sup>26</sup>.

The quality of innovation development institutes in Ukraine and Georgia is created by institutional transformations based on the following processes: updating (recombination of existing institutions); formation (development) of new institutes; import of borrowed institutions; the transformation of existing informal institutions into new formal ones (and vice versa); adaptation of existing formal institutes to new informal (and vice versa)<sup>27</sup>.

In order to accelerate the innovative development in both countries, appropriate regulators in the form of an “inflation elevator” are needed. The notion “innovation elevator” is treated by foreign researchers E. Fiaksel and N. Butryumova as “... a set of elements of the innovation system that determine the development of innovative entrepreneurship ... regulators that support the infrastructure and provide technology transfer”<sup>28</sup>.

Ukrainian scientists L. Fedulova and I. Yanenkova put forward the hypothesis that “innovative elevator is a network of state-established development institutes that support innovative projects at all stages of economic

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26 Kovalchuk, Yu. A., Polyakov, S. G., & Stepnov, N. N. (2013). Rol' gosudarstvennogo regulirovaniya i institutsional'noy sredy v usloviyakh innovatsionnoy ekonomiki [Role of state regulation and institutional environment in the conditions of innovative economy]. *Innovatsii*,3(173), 21 [in Russian].

27 Kovalchuk, Yu. A. (2013). Rol' gosudarstvennogo regulirovaniya I institutsional'noy sredy v usloviyakh innovatsionnoy ekonomiki [Role of state regulation and institutional environment in the conditions of innovative economy], 21-22. [in Russian].

28 Fiyaksel, E. A., & Butryumova, N. N. (2010). Analiz rynka malykh innovatsionnykh predpriyatiy Nizhegorodskoy oblasti [Analysis of the market of small innovative enterprises of the Nizhny Novgorod region]. *Innovatsii*,10(144), 77-83 [in Russian].

development”<sup>29</sup>. According to the researchers, there should be a mechanism for exchanging information on promising innovative projects within such an elevator. At the same time, “innovative elevator” should become an effective tool for “docking” the sphere of research and development with business that are supported by institutes of innovative development.

But the biggest problem that is difficult to solve is the fact that Ukrainian and Georgian institutions of innovation development were created at different times, for different models, pursuing different goals. Today, it prevents the institutes from working concertedly, being compatible within a single system, since they are not part of a single plan. The efficiency of work and the expediency of existence of innovative development institutes can be estimated only under the conditions when the enterprises that are supported and funded by the institute, “will be tested by the market” and, as a result, will be competitive on the market and in demand by market “players”. It is these institutions that should determine how well the “innovation elevator” and its participants work.

Thus, the system of “innovation lift” of Ukrainian and Georgian economies should be aimed at creating favorable conditions for the establishment and development of an innovative economy. “The work of the innovation elevator” is provided by the “launch” of regulators at all levels of economic aggregation, involving state structures without the support of which “from above”, it is impossible to move “from the bottom” and due to the work of accompanying information, financial, consulting and infrastructural institutes-mechanisms within the framework of the innovation process.

We believe that institutional regulators are a driving force in the process of forming and establishing an innovative economy. Regulators monitor the

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29 Fedulova, L. I., & Yanenkova, I. H. (2012). Orhanizatsiya vzayemodiyi uchasnykiv protsesu upravlinnya innovatsynym rozvytkom ekonomiky [Organization of interaction of participants in the process of management of innovative economic development]. *Biznes-Inform*, 10, 12-16 [in Ukrainian].

changes of some parameters of the object under control and react to them with the help of some control algorithms complying with the given quality control<sup>30</sup>.

Consequently, the institutional regulators of the formation of an innovative economy will make this process well-organized, the one that takes place within the framework of formal rules, norms and laws and establishes the interaction of all institutes of innovation development, which is appropriate and the most suitable for an efficiently functioning economy of an innovative type.

Collaboration, partnership between power, science and business for the purpose of economic modernization should become the basis of these institutional regulators. It will foster gaining experience, access to prospective technologies, innovative ideas and the implementation of innovative projects.

Thus, we can assert that such institutes and regulators will contribute to the establishment and development of the innovative economies of Ukraine and Georgia. Innovation is a potential multiplication that can be used for qualitative growth, depending on strategic priorities. The pragmatism of organizational and institutional action has to become the basis of the formation of “new” institutions of innovative development by introducing rules of innovative behavior that conform to existing formal and informal norms and ensuring the implementation of these rules by stimulating and motivating the actors in the process of institutional and structural transformation of national economies of innovative type.

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30 Rehulyator [Regulator]. (2016, August 18). Retrieved from <https://uk.wikipedia.org/wiki/Регулятор> [in Ukrainian].

### REFERENCES

- Arhireyev, S. I., Gritsenko, A. A., Malyy, I. Y., ... Chugunov, I. Y.** (2008). *Institutsional'naya arkhitektonika i dinamika ekonomicheskikh preobrazovaniy: monografiya [Institutional architecture and dynamics of economic transformations: monograph]* (A. A. Gritsenko, Ed.). Khar'kov: Fort [in Russian].
- Boyko, A. V.** (2014). *Stiykist' natsional'noyi ekonomiky: teoriya, metodolohiya, praktyka [Sustainability of the national economy: theory, methodology, practice]*. Kyiv: In-tekon. ta prohnozuv. NAN Ukrayiny [in Ukrainian].
- Commons, J. R.** (2011). *Pravovyie osnovy kapitalizma [Legal Foundations of Capitalism]*(*Ekonomicheskaya teoriya*) (A. Appolonov & A. Markov, Trans.). Moscow: Vysshaya Shkola Ekonomiki (Gosudarstvennyy Universitet), pp. 1-416 [in Russian].
- Fedulova, L. I., & Yanenkova, I. H.** (2012). Orhanizatsiya vzayemodiyi uchasnykiv protsesu upravlinnya innovatsiynym rozvytkom ekonomiky [Organization of interaction of participants in the process of management of innovative economic development]. *Biznes-Inform*, 10, 12-16 [in Ukrainian].
- Fiyaksel, E. A., & Butryumova, N. N.** (2010). Analiz rynku malykh innovatsionnykh predpriyatiy Nizhegorodskoy oblasti [Analysis of the market of small innovative enterprises of the Nizhny Novgorod region]. *Innovatsii*, 10(144), 77-83 [in Russian].
- Hasanov, S. S.** (2014). Finansuvannya strukturnykh zrushen' ta innovatsiynoyi modernizatsiyi [Financing of structural changes and innovative modernization]. *Finansy Ukrayiny*, 5, 20-29 [in Ukrainian].
- Heyets, V. M.** (2009). *Suspil'stvo, derzhava, ekonomika: fenomenolohiya vzayemodiyi ta rozvytku [Society, state, economy: phenomenology of interaction and development]*. Kyiv: In-tekon. ta prohnozuv. NAN Ukrayiny [in Ukrainian].
- Heyets, V. M., Semynozhenko, V. P., & Kvasnyuk, B. Y.** (Eds.). (2007). *Stratehichni vyklyky XXI stolittya suspil'stvu ta ekonomitsi Ukrayiny: u 3-kh tomakh [Strategic Challenges of the 21st Century for Society and the Economy of Ukraine: in 3 volumes]*(*Innovatsiyno-tekhnologichnyy rozvytok ekonomiky ed. [Innovative and technological development of the economy ed.]*, Vol. 2). Kyiv: Feniks, 564 [in Ukrainian].

- Heyets, V. M., Panchenko, Ye. G. & Libanova E. M.** (2003). Ekonomichne zrostannya v perekhidnyy period [Economic Growth in Transition]. In V. M. Heyets (Ed.), *Perekhivna ekonomika [Transition Economics]*. Kyiv: Vyshcha shkola [in Ukrainian].
- Hurwicz, L.** (1960). Optimality and Informational Efficiency in Resource Allocation Processes. In K. Arrow, S. Karlin & P. Suppes (ed.), *Mathematical Methods in the Social Sciences* (pp. 27-46). Stanford: Stanford University Press.
- Innovatsiyi v Ukraini: Yevropeys'kyy dosvid ta rekomendatsiyi dlya Ukrainy* (Innovatsiyi v Ukraini: propozyziyi do politychnykh zakhodiv ed., Vol. 3, Ostatochnyy variant (proekt vid 19.10.2011 «Proekt ES «Vdoskonalennya stratehiyi polityky ta rehulyuvannya innovatsiy v Ukraini»)) [Innovation in Ukraine: European Experience and Recommendations for Ukraine. Innovation in Ukraine: suggestions for policy measures ed. The final version (project from 19.10.2011 “EU Project “Improving the Policy Strategy and Regulating Innovation in Ukraine””)]. (2011). Kyiv: Feniks. Retrieved from [https://kneu.edu.ua/userfiles/our\\_partners/gudrun/3\\_UA.pdf](https://kneu.edu.ua/userfiles/our_partners/gudrun/3_UA.pdf) [in Ukrainian].
- Kovalchuk, Yu. A., Polyakov, S. G., & Stepanov, N. N.** (2013). Rol' gosudarstvennogo regulirovaniya i institutsional'noy sredey v usloviyakh innovatsionnoy ekonomiki [Role of state regulation and institutional environment in the conditions of innovative economy]. *Innovatsii*, 3(173), 18-25 [in Russian].
- Kyrychenko, O. A.** (2011). Innovatsiynyy rozvytok ekonomiky v konteksti suchasnoyi teoriiy modernizatsiyi [Innovative economic development in the context of the contemporary theory of modernization]. *Ekonomika ta derzhava*, 7, 13-16 [in Ukrainian].
- Marshall, A.** (1993). *Printsipy ekonomicheskoy nauki [Principles of Economics]* (Vol. 1,2,3, Ekonomicheskaya mysl' Zapada). Moscow: Progress [in Russian].
- Moskalenko, O. M.** (2014). *Teoriya i model' vyperedzhayuchoho ekonomichnoho rozvytku v systemi suspil'nykh stratehichnykh potreb: monohrafiya [Theory and model of advanced economic development in the system of social strategic needs: monograph]*. Kyiv: KNEU [in Ukrainian].
- Naukova ta innovatsiyna diyal'nist' v Ukraini [Scientific and innovative activity in Ukraine]. (2016). *Derzhavna Sluzhba Statystyky Ukrainy*, Statystychnyy zbirnyk, 1-257. doi:10.18411/d-2016-154 [in Ukrainian].

- Nørgaard, O.** (2000). *Economic Institutions and Democratic Reform: A Comparative Analysis of Post-Communist Countries (Economies and Societies in Transition)* (Economies and Societies in Transition). Cheltenham: Edward Elgar Publishing Limited.
- North, C. D., & Fogel, R. W.** (1993, December 9). Economic Performance through Time. Lecture to the memory of Alfred Nobel. Retrieved from [https://www.nobel-prize.org/nobel\\_prizes/economic-sciences/laureates/1993/north-lecture.html](https://www.nobel-prize.org/nobel_prizes/economic-sciences/laureates/1993/north-lecture.html)
- Nureyev, R. M.** (Ed.). (2010). *Ekonomicheskiye sub'yekty postsovetskoy Rossii (institutional'nyy analiz): desyat' let spustya [Economic subjects of post-Soviet Russia (institutional analysis): ten years later]*(212th ed., Vol. 1: Rossiyskiye domokhozyaystva, Nauchnyye doklady: nezavisimyy ekonomicheskyy analiz [Russian Households, Scientific Reports: Independent Economic Analysis]). Moscow: Moskovskiy obshchestvennyy nauchnyy fond [in Russian].
- Pakhomov, S. Yu.** (2013). Ekonomichne zrostannya v konteksti instytutsionalizmu [Economic Growth in the Context of Institutionalism]. *Formuvannya rynkovykh vidnosyn v Ukrayini, 4*, 11-16 [in Ukrainian].
- Rehulyator [Regulator]. (2016, August 18). Retrieved from <https://uk.wikipedia.org/wiki/Регулятор>[in Ukrainian].
- Sukharev, O. S.** (2017). *Ekonomika global'nogo ekstsesa: instituty, finansy, razvitiye, politika [The economy of global excesses: institutions, finance, development, politics]*. Moscow: LENAND [in Russian].
- Sukharov, O. S.** (2013). *Metodologiya i vozmozhnosti ekonomicheskoy nauki: monografiya [Methodology and possibilities of economic science]*. Moscow: KURS: IN-FRA-M [in Russian].
- Togunov, I. A.** (2009). *Novoye v teorii organizatsii: fraktal'no-fasetochnyye modeli: monografiya [New in the theory of organization: fractal-facet models: monograph]*. Vladimir: Sobor, pp. 64-66, 68 [in Russian].
- Veblen, T.** (1984). *Teoriya prazdnogo klassa [The Theory of the Leisure Class]*(Ekonomicheskaya mysl' Zapada) (S. Sorokina, Trans.; O. Radynova & V. Motylev, Eds.). Moscow: Progress, pp. 5-7 [in Russian].

**Zhelyuk, T. L.** (2010). Modernizatsiya systemy upravlinnya dovhostrokovym rozvytkom natsional'noyi ekonomiky [Modernization of the management system for the long-term development of the national economy]. *Aktual'ni pytannya ekonomiky*, 3, 55-61 [in Ukrainian].

### **3.2. Development of National Innovation Systems in the context of their global integration**

The paradigm of post-industrial economy implies that in the 21st century sustainable economic growth and global competitiveness can be achieved only through rapid introduction of innovative products, services and processes as well as constant modernization of production facilities on micro level combined with favorable climate for creativity and innovation on a state level. The experience of leading economies suggests that it can be gained primarily by developing national innovation systems (NISs) that ensure constant generation, diffusion and commercialization of new knowledge through a complex set of legal, economic, institutional and informational incentives.

Global competition has changed the rules of innovation activities of multinational corporations by involving a growing number of actors from different countries on all stages of innovation processes for benefiting from distinctions in the costs and availability of talents around the world. It has led to integration of NISs globally through the development of strong international linkages between their actors, formation of supranational bodies of innovative development in different regions, functioning of global innovation networks and development of infrastructure for international cooperation in R&D, technology transfer, trade in high-tech goods, services and intellectual property rights. This new environment enables the key innovators to

hold their leadership by means of accelerated creation and commercialization of breakthrough technologies based on attracting intellectual potential of the global community. These new phenomena and processes determine the increasing need for conceptualizing thereof as well as for developing strategies and policies for both business and government to improve their innovation performance considering the opportunities and threats arising from global integration of NISs.

The research papers in innovation management and global economics offer important insights into this issue. Thus the national innovation systems framework was elaborated by Freeman, Lundvall, Nelson, Metcalfe, Edquist, Atkinson and many others. Recent trends of internationalization of innovation, as well its role in prosperity of businesses and countries were investigated by Chesbrough, Ernst, Herstad, Fallah and Lechler and others. Some key problems of the integration of NISs are beginning to shape policy debates in the OECD, World Economic Forum, the World Bank, the World Intellectual Property Organization, and the European Commission. But still despite a growing body of research the nature of global integration of national innovation systems is not clearly addressed.

**The theoretical basis of the study of national innovation systems integration.** In the past several decades, studies have proved that learning, knowledge creation and innovation are crucial not only for sustainable economic growth and competitive advantages but also for solving aggravated social and environmental challenges faced by the global economy. Recent writings added more complexity to the attributes of the innovation processes and to the context in which it operates. They showed that creation, diffusion and commercial use of new knowledge are the result of a complex network of linkages between different organizations and institutions referred to as national innovation systems. The latter provide more effective usage of human,

scientific, technical, technological, financial, infrastructural and managerial resources for creating and using breakthrough innovations (OECD, 1997).

Traditionally, NIS has been conceptualized as a set of organizations which interact in the production, diffusion and use of new technologies and therefore determine the innovative performance of national economy (Freeman, 1987; Lundvall, 1988). Further research enhanced the concept by investigating national specifics of the NISs in different countries (Nelson, 1993), drivers and incentives of innovation development (Patel and Pavitt, 1994; Metcalfe, 1995), institutional aspects of the systems (North, 1994), mechanisms of technology transfer (Edquist, 1997), regional and sectorial innovation systems (Cooke, 1992; Malerba, 1999; Asheim and Isaksen, 2002). More recent papers on the NIS focus on open innovations (Chesbrough, 2003), the “Triple Helix” in innovation systems (Etzkowitz, 2008), the role of business environment and regulatory framework (Atkinson, 2013), the role of civil society in innovation development (Carayannis and Campbell, 2011), integration and disintegration processes within NISs (Wixted, 2009), harmonization of national and local innovation systems (Freeman, 2002; Komninos, 2013; Ortiz, 2013).

The national innovation system operates through an organic combination of a market and regulatory mechanisms that ensures innovation process by attracting intellectual, financial, organizational, technological, infrastructural and informational resources for it. It was revealed that the complexity of NISs as an object of study had led to numerous definitions describing either a certain attributes or national specifics of the systems in different countries (Godin, 2007). This fact greatly complicates the task of combining the results of such surveys into a single theoretical framework. From such a perspective, we suggest to define NISs through characterizing their multiple attributes (Table 3.1).

**Table 3.1**

**System approach to definition of NISs**

Attributes	Characteristics
<b>Target</b>	NIS, as a subsystem of the national economy, is designed to provide its innovative development
<b>Structure</b>	NIS is a complex, coherent set of private and public organizations, and the linkages between them, that taken together create a new integrity with properties and functions that differ from the properties and functions of its components
<b>Functions</b>	The elements of NIS individually or in their interactions, enable the creation, attraction, modification, storage, usage and diffusion of knowledge, skills and new technologies, and provide regulation and control of these processes
<b>Institutions</b>	Institutional environment as a component of NIS includes a set of economic, social, political, organizational and cultural factors, as well as legislation, rules and regulations that determine the forms, methods and intensity of interaction between actors
<b>Processes</b>	NIS provides a favorable environment for coordination of linkages between the actors of the innovation processes, complementarity and acceleration of the process phases, as well as effective redistribution of resources within the system
<b>Evolution</b>	The emergence and evolution of NISs is based on self-organization, inertia, integration and disintegration of actors and their interaction with the environment (economic, social, cultural, political, natural and geographical)

Modern national innovation systems are in the process of intra-system (aimed at modernizing the elements and their relations within the system) and inter-systems (aimed at modernizing the form and content of the relations between the NISs of different countries) transformations that apply to all their constituent elements and all hierarchical levels. At the global level, the transformation of NISs reveals itself through the strengthening of their integration processes. Possibilities for this are the intensive development of global information and communication infrastructure, international trade, foreign direct investments, migration of labor force, international monetary and financial relations, strengthening of the role of international organizations. Differences in wages around the world together with lower trade barriers and transport costs have transformed the economics of many industries

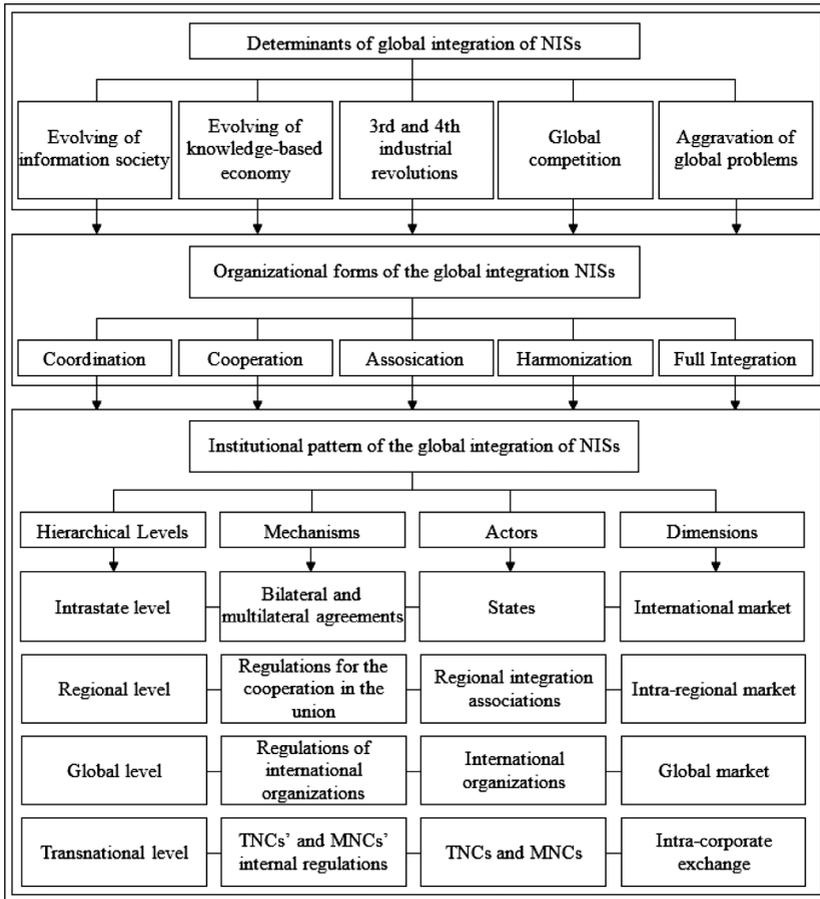
since much production has moved to emerging countries, particularly China. It has led to fragmentation of value chains and emergence of new centers of economic and political power where the development of new technologies is stimulated aggressively. As a result, technological knowledge has become increasingly scattered around the world. It forces multinational corporations (MNCs) to globalize their R&D activities and to develop global research networks, global markets of high-tech products and services, institutions of international regulation in S&T (Fallah and Lechler, 2008).

Thus, national innovation systems of the advanced economies are becoming pierced by global networks of production and distribution of goods, services and new knowledge (Ernst, 2002; OECD, 2008). This leads to emerging “multi-spatial innovation systems” that combine actors of different NISs within an innovation process (Wixted, 2009). In such conditions the efficiency of national innovation systems increasingly depends on the intensity of their collaboration and integration into global innovation processes based on attracting knowledge-intensive sectors with high added value. It is the integration of NISs that assures a rapid generating and international transfer of new technologies and, as a result, an efficient and constant innovation process.

Global integration of national innovation systems can be described as their gradual unification based on the convergence of national policies, institutional and economic conditions of innovative development, accompanied by emergence of specialized supranational, transnational and global organizations, as well as by the introduction of international legal, administrative, financial and information incentives. Integration of NISs encourages global innovation processes, international S&T cooperation, and trade in high-tech goods, services, intellectual property rights, and leads to a more efficient use of human, financial, infrastructural, scientific and technological resources. This process may evolve through coordination, cooperation, association, harmonization or full integration of the actors on international, regional, global or transnational levels with appropriate mechanisms, actors and di-

**CHAPTER 3. INNOVATIVE DEVELOPMENT IN THE XXI CENTURY:  
FACTORS AND RESOURCES**

mensions (Fig.3.1). In this context, national governments act as institutions for the harmonization of global and local innovation processes. They form national models of innovation policy and ensure their implementation in the context of the global integration through identifying goals and priorities, developing long-term strategy, and choosing one or another composition from a wide range of coordination mechanisms and regulatory tools.



**Figure 3.1. The mechanism of global integration of national innovation systems**

Global integration of NISs tends to regionalization and results in evolving international (innovation systems providing consolidation of human, scientific, technical, technological, financial, infrastructural and managerial resources of member countries for a joint response to global challenges (Freeman, 2002). International innovation systems are evolving through unification of national incentives, formation of joint international and supranational institutions and organizations, and development of shared markets of knowledge, technology, venture capital and highly skilled professionals. All these actions aim ensure favorable conditions for high innovation activity and international R&D cooperation on micro and macro levels.

The integration of NISs leads to gradual homogenization of the international environment for innovation and creativity, reduction of the technological gap between countries and alignment of key macroeconomic indicators of innovative development such as expenditures on R&D to GDP ratio, technological structure of exports, the number of researchers and engineers per 1 million of inhabitants, and so on. The lack of technological and institutional gaps between the member states is a precondition for effective functioning international innovation systems avoiding internal conflicts and maximizing the use of innovative potential (Ortiz, 2013).

**Recent trends in development and global integration of national innovation systems of the key innovators.** The key role in generating and diffusion of innovations around the world is played by corporate sector that bears the bulk of R&D expenses – 77.7% in Japan, 77.2% in Israel, 73.3% in Korea Republic, 70.4% in China, 69.7% in Switzerland and 66.4% in the USA. MNCs with extensive global networks of subsidiaries account for almost 60% of world trade with goods and services and about 90% of world trade with intellectual property rights (OECD, 2012).

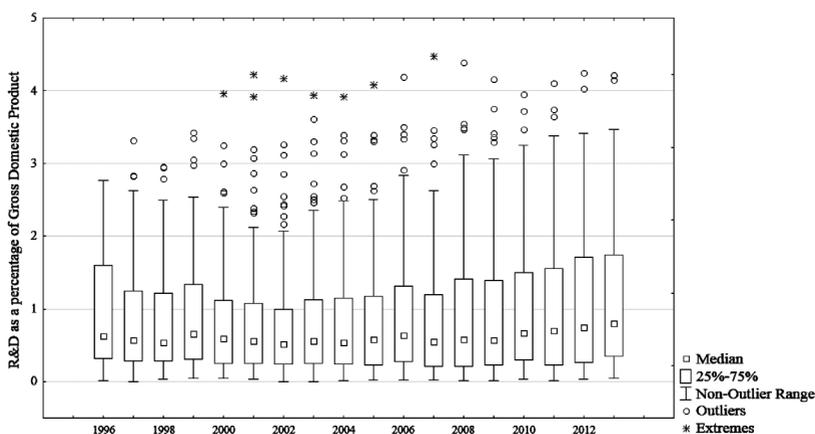
In such circumstances, the competition between countries shifts to creating more favorable ecosystems for corporations investing in R&D through developing research infrastructure, implementing attractive tax regimes, and

bringing up innovation culture. This helps countries to increase their competitive advantage in the global value chain to attract global investments into knowledge-intensive sectors that promote job creation and human capital development.

From this point of view, the most competitive NISs were developed by the US, China, Japan, Korea Republic, Germany, France and the UK which in combination account for 2/3 of global R&D. Thus, according to R&D Magazine in 2016 global R&D totaled 1.931 trillion USD, representing about 1.93% of global GDP. The United States accounted for 26.5% of this amount, China – 20.8%, Japan – 8.9%, Korea Republic – 4.2%, EU - 22.4% (including Germany - 5.9%, France - 3.3%, UK - 2.8%). These countries are also among the leaders according to Global Innovation Index. In particular the USA are ranked 4<sup>th</sup>, the UK – 5<sup>th</sup>, Germany – 9<sup>th</sup>, Republic of Korea – 11<sup>th</sup>, Japan – 14<sup>th</sup>, France – 15<sup>th</sup>, and China 22<sup>nd</sup> among 127 countries. In contrast Ukraine is ranked 50<sup>th</sup> and Georgia 68<sup>th</sup>.

The trends of recent years confirm the further deepening of the technological gap between countries. The country's place in the global innovations and technology market is determined, first of all, by the volumes of R&D expenditures and the efficiency of their use by the country's R&D infrastructure, which is measured by the number of patents. Given these indicators, the global technology market at the country level has a polycentric structure – a certain global technological oligopolism, which is represented by the USA, the EU and Japan, is formed. These countries form a kind of “high technology pole” of the modern world economy, because they are able to adequately finance the R&D. Its closest surround is the national innovation systems of other developed countries - OECD members, new industrialized countries and China. The periphery of the global technology market consists of developing countries, which are the largest population but account for less than 5% of the world's R&D expenditure.

The increasing competition between countries on attracting more investments into S&T sector as well as the deepening technological gap between them is reflected in their distribution by R&D to GDP ratio. During recent decade the upper limits of all quartiles are constantly growing (Figure 3.2). The limits of upper and lower quartiles demonstrate asymmetric distribution of research around the world whereas the trends of these indicators proves increasing scattering of R&D between countries.



**Figure 3.2. Distribution of countries by R&D to GDP ratio**

*Source: calculated by the author based on the World Bank data*

The rapid development of the key innovators is based on powerful corporate innovation systems of their TNCs integrated with research universities, innovation startups and other companies into innovation networks with new organizational and economic forms of business (strategic alliances, joint research centers, joint R&D programs and projects, corporate venture funds, crowd funding, etc.) providing companies with access to unique knowledge, skills and technology. This requires the shift towards an open model of innovation management based on opportunities of scientific, technological

and intellectual exchange and network-based innovation processes (Hersstad, 2008). Innovation networks concentrate large volumes of intellectual, organizational and financial resources, provide rapid generation, diffusion and commercialization of new knowledge as well as conduct large-scale research projects with disruptive effect.

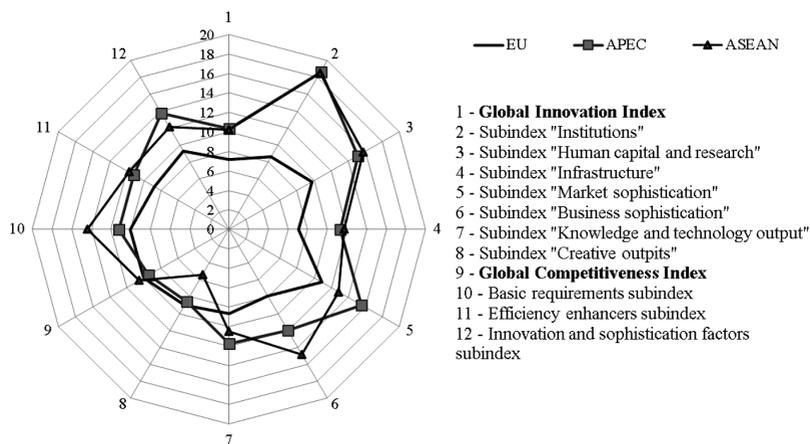
Development of global innovation networks with numerous actors across the world is the key driver of international cooperation in R&D, intrastate flows of knowledge and technology, migrations of talents and venture capital around the world. In this context concentration of R&D expenditures across different countries is the best indicator of their being included into the global innovation processes.

The intensification of international S&T cooperation within global innovation networks, on the one hand, and the increase of technological asymmetries in the world economy, on the other hand, naturally lead to the gradual formation of a system of institutions for coordination and multilateral regulation of international innovation activity and interaction both at the level of separate integration unions and on the global level. Thus, the empirical research of integration process in the European Union (EU), the Association of Southeast Asian Nations (ASEAN) and Asia-Pacific Economic Cooperation (APEC) revealed a number of initiatives implemented by the unions to stimulate the integration of the member countries' NISs. These initiatives include: joint strategies of innovation development (in EU – Europe 2020; in ASEAN – Vision 2020; in APEC – Growth Strategy); action plans for S&T cooperation (in EU – Innovation Union initiatives; in ASEAN – The Action Plan of Action on Science and Technology (APAST), Krabi Initiative 2010; in APEC – Policy Partnership on Science, Technology and Innovation (PPS-TI)); networks of supranational regulators of S&T cooperation (in EU – European Research Council, Joint Research Center, The Directorate-General for Research and Innovation, etc.; in ASEAN – Committee on Science and Technology (COST) with subcommittees; in APEC – Industrial Science and Technology Working Group (ISTWG), Steering Committee on ECOTECH,

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

etc.); joint research projects and programs (in EU – European Research Area, Horizon 2020, etc.; in ASEAN – joint research in nutrition, biotechnology, meteorology and geophysics, oceans, alternative energy sources, ICT, etc.; in APEC – Open innovation platform (2011), Smart cities Forum (2012), Development of ICT-based innovation networks (2013), etc.).

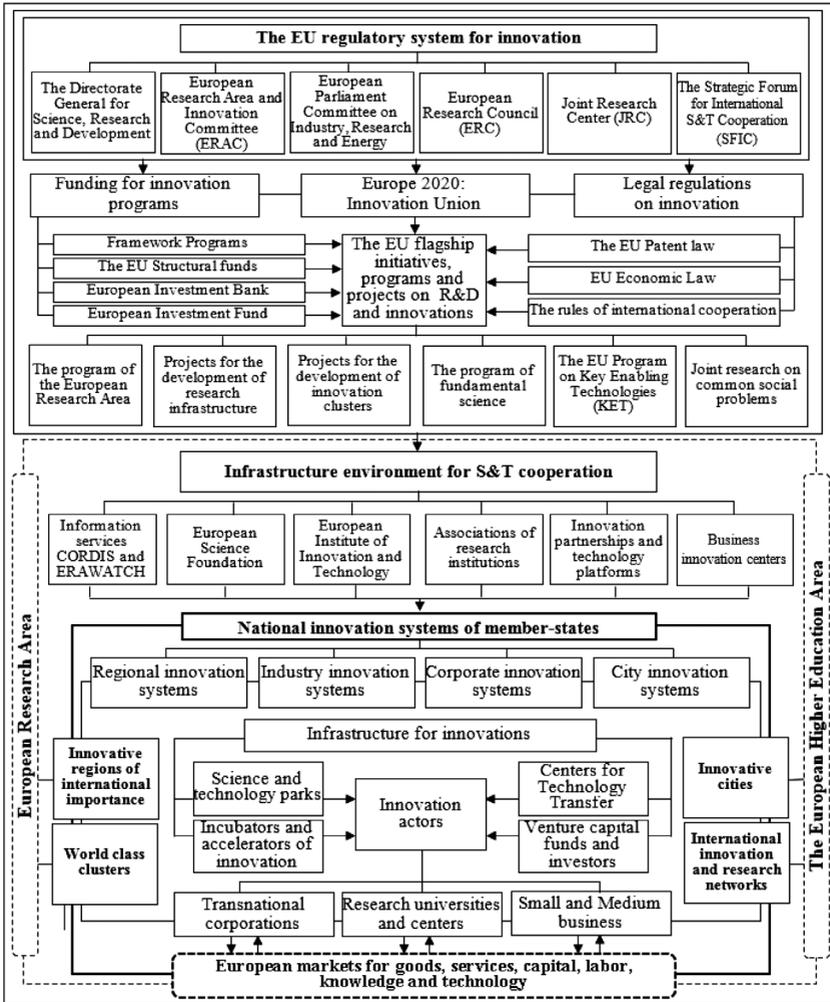
This enables us to point out that the analyzed integration unions tend to form international innovation systems to create favorable institutional conditions for innovation processes developing beyond the national borders and, thereby, to increase the capabilities and effectiveness of innovations in the member countries. The comparative analysis of the integration unions regarding their success in developing international innovation systems revealed leadership of the EU in this field. In particular, the calculated Euclidean distances between member-countries in APEC and ASEAN demonstrate at least 50% lower degree of convergence than the EU (especially regarding infrastructure, institutional and business environment, human capital) (Fig. 3.3)



**Figure 3.3. Average Euclidean distances between member-countries  
of the integration unions, 2016**

*Source: calculated by the author based on GII and GCI data*

**CHAPTER 3. INNOVATIVE DEVELOPMENT IN THE XXI CENTURY:  
FACTORS AND RESOURCES**



**Figure 3.4. The European Union innovation system**

The deeper research of innovation policy in EU (e.g. common S&T policy and appropriate system of common organizations and institutions for

innovations) prove the gradual formation of the EU innovation system. The modern model of this innovative system includes a wide range of constituent parts, including a large number of policy areas, projects, programs and initiatives that complement one another and are united by the common strategy and goals. This system is based, on the one hand, on the model of multilevel governance, on the other - on the model of horizontal coordination (Figure 3.4).

The results of our research highlight three stages of developing innovation system in the EU based on priorities and targets of stimulating international S&T cooperation. On the 1<sup>st</sup> stage (1984 - 1999) common goals in S&T for all member countries were identified, joint research programs were introduced as well as special financial instruments for granting international cooperation in research and innovation were developed. The 2<sup>nd</sup> stage (2000 - 2010) was dedicated to harmonization of national innovation policies through developing a common strategy and supranational regulatory system, implementing the tools for support and monitoring of innovation activities in member-countries. The 3<sup>rd</sup> stage (2011 - 2020) aims to complete the international innovation system through harmonization of legislation of member countries in the field of innovation, development of common markets of high-tech goods, services, intellectual property rights and highly skilled professionals, formation of the European Research Area, development of European research infrastructure, and implementation of the single regional innovation policy (S3 Platform).

The purposeful stimulation of innovations for decades has made the EU one of the key innovators – the Union accounts for almost 1/4 of world expenditures on R&D; 1/3 of world exports of high-tech products; nearly 1/3 of world inflows of royalties. Innovative leaders in the EU are Germany, Sweden, Finland and Denmark with increasing knowledge-intensive sectors, large numbers of innovative enterprises, intensive patent activities and spending on R&D above 2.5% of GDP. However, there is a large group of

countries such as Cyprus, Romania, Malta, Bulgaria, Croatia, Poland, Latvia, and Greece with the volume of spending on R&D less than 1% of GDP. Such a significant differentiation of countries in terms of the efficiency and capacity of their NISs hinders the integration process and does not allow the EU to use the creative potential of the European community in full.

**Improvement of state innovation policy: lessons for Ukraine and Georgia.** Development of the national innovation system and the transition to an innovative economy are an absolute imperative for both Ukraine and Georgia, because the current form of their inclusion in the global economic processes is characterized by increasing contradictions between short-term and long-term interests. Support for innovation and the formation of an effective innovation system is necessary both for increasing the competitiveness of national goods and services on global markets, and for resolving internal problems, mitigation of negative factors limiting the potential for economic growth.

Currently the economies of both countries are characterized by the presence of a number of structural, institutional, financial and market problems of transition to an innovative model of economic growth. According to research of World Economic Forum the key problem for Georgia on this way is an inadequately educated workforce. However, for Ukraine, such problem is corruption. Among common problems are high inflation rates, poor access to financing, political instability, inefficient government bureaucracy, inefficient tax rates and tax regulations. In both countries, only a few elements of NISs are created; there are gaps between science, education and business; absence of network cooperation, which forms the basis of innovation growth in the leading countries. The weakness of cooperation between institutions prevents the emergence of synergistic effects, redistribution of risks and available resources.

Despite the common features between the two countries, there are also a number of serious differences. Georgia has proven to be resilient to inter-

nal and external shocks, regional geopolitical dynamics and the spill-over effects of the global financial crisis over the past decade, successfully introduced much needed governance reform, and become synonymous with world leadership in terms of doing business. But despite the overall positive macroeconomic picture, sustained economic growth, investment flows and export dynamics have not translated into benefits for the wider population or for small and medium enterprises (SMEs) through improved productivity or net job creation. The country still faces the great problems in quality of scientific research institutions, innovation activities and R&D expenditure, availability of scientists and engineers, a skills mismatch in the labour market (the country was ranked 118 among 137 in innovation pillar of Global Competitiveness Index). At the same time, Ukraine has a strong innovative potential, which is determined, first of all, by the human capital (the country was ranked 61 among 137 in innovation pillar of Global Competitiveness Index) but weak institutions combined with high risks, including an escalation of the conflict, further deterioration in the external environment, and difficulty to advance reforms in a complex political environment. In such circumstances the competitiveness of Ukraine remains considerably low and the possibilities of its further economic growth in the existing technological structure of the national economy are almost exhausted.

Taking into account the above, it should be noted that the positions of Ukraine and Georgia in the global economic system in the near future will be determined by how successful they will be in developing the national innovation systems and its integration into global scientific and technological space. The integration of NISs opens new opportunities for solving national social and economic problems based on consolidation of intellectual and financial resources as well as research facilities of different countries for developing new breakthrough technologies. To be efficient integration process requires the complementarity of the countries' innovation systems which makes it possible to create effective international institutes and mech-

anisms for interstate governance. The complementarity is determined by the proximity of institutional arrangements (political system and ideology, legal mechanisms regulating economic activities, sophistication of business environment and business rules, regulatory mechanisms of innovation development, etc.), levels of socio-economic development and market sophistication (levels of GDP per capita, development of financial market and infrastructure, the technological structure of the economy, etc.), scientific and technological potential (research infrastructure, intellectual capital, education systems, etc.). It urges the necessity of researching the latest trends of innovative development of leading countries.

Analysis of the long-term strategies of the key innovators such as the United States (Strategy for American Innovation), China (China 2030, Roadmap for development of science and technology 2050), EU (Europe 2020), Singapore (Strategy Home), Republic of Korea (Basic Plan for Science and Technology, Plan of regional science and technology) and Japan (Innovation 25, The Fourth basic plan for science and technology) enabled us to summarize the top priorities for innovations leading to competitiveness in the 21<sup>st</sup> century. They are: modernization of industries through introduction of additive technologies, new materials, renewable energy and fully-automated production processes; greening based on the mass use of low-waste production technologies, restoration of ecosystems and implementation of pollution control; automation and robotics based on mass use of artificial intelligence and intellectual systems; IT based on cloud technology, new generations of mobile communications and portable computers; the use of new technologies, especially genetic engineering, nanotechnology and biotechnology, synthetic biology, to address the healthcare problems and food production.

Achieving the identified goals is provided through the state S&T policies oriented on support of centers of excellence concentrating intellectual resources (world-class research universities, high-tech companies, world-class

clusters, innovative cities), development of the sophisticated infrastructure for innovations (innovation drivers and cultivators), creation of a favorable innovation climate (with effective financial, organizational and economic mechanisms of state support), promotion of integration of NISs into global innovation networks (participation in international research projects, international mobility of researchers, attracting intellectual and financial resources).

Given the fundamental role of corporations in providing innovative development of national economies, reforming of corporate approaches to R&D is equally important. Recent changes in strategies of the most innovative companies in the automobile sector, healthcare, electronics and IT, demonstrate a shift towards an open model of corporate innovation systems based on their integration through strategic alliances and joint research centers with universities and other companies (Intel, Roche, Microsoft, Google, Samsung, Sanofi), joint research programs (Novartis, Merck, Pfizer, Volkswagen), establishment of corporate venture funds (Google, Intel, Novartis, IBM, Samsung, Pfizer, Roche, General Motors), corporate universities (IBM, Google, Cisco, General Electric), organization of technological platforms and forums (3M, Intel, Microsoft, Google, Samsung). These changes are mostly driven by competition for talents and inability of any company to conduct all needed R&D alone. Integration of corporate innovation systems can overcome these challenges through scientific, technological and intellectual exchange between organizations.

Integration of corporate innovation systems leads to formation of innovation networks that combine innovation drivers (research universities, laboratories, multinational corporations and their research divisions and subsidiaries, innovative companies and start-ups focused on development of brand new technologies, products and services), innovation cultivators (incubators, accelerators, centers of technological expertise and technology transfer, co-working offices, training and patent centers, venture capital and law firms that provide consulting and other services) and service organiza-

tions (organizations creating comfortable conditions for work, communication and recreation of people) into a single system, allowing to convert ideas into innovative products for the shortest period of time and the least cost.

Thus for Ukraine and Georgia the following ways of forming the national innovation systems and their accelerated integration into the global scientific and technological space can be identified: harmonization of national patent legislation with the norms of European law; development of the newest research infrastructure (incubators and accelerators of innovations, centers of fundraising and technological expertise); stimulation of international cooperation in R&D (attracting foreign venture capital through providing guarantees and tax preferences to investors, stimulating international mobility of researchers); creation of world-class universities (financial autonomy of universities, proper funding of research and the creation of appropriate incentives for partnership with business); development of innovative entrepreneurship (simplification of business start-up procedures, access to financial resources, assistance in registering high-tech patents in foreign patent offices, granting preferential tax treatment for start-ups, innovation and venture companies); direction of research on the development of breakthrough technologies (nano-, bio-, info- and cognitive technologies); bringing educational programs in line with the requirements of the 21st century (development of cognitive, emotional, adaptive and social abilities in schools; teaching methodologies and research tools in higher education institutions).

### **Conclusions**

At the present stage of the global economy development innovations are the main source for solving urgent social and environmental issues, sustainable economic growth and gaining competitive advantages. Innovative development of countries is provided through the formation and functioning of national innovation systems with effective implementation of human, scientific, technical, technological, financial, infrastructural and managerial resources for creating and using breakthrough innovation.

Global challenges and increased competition for investment and intellectual resources lead to the global integration of the key innovators that can be described as a deliberated process of gradual unification of their national innovation systems based on the convergence of national policies, institutional and economic conditions of innovative development, accompanied by the formation of specialized supranational, transnational and global institutions, the introduction of specific legal, administrative, financial and information systems and mechanisms of global innovation environment that encourages innovation processes, international science and technology cooperation, international trade in high-tech goods, services, intellectual property rights, and leads to a more efficient use of human, financial, infrastructural, scientific and technological resources.

The global integration of national innovation systems has a trend toward regionalization, particularly EU, APEC, ASEAN make actions toward creating of international innovation systems with supranational institutions. These processes are determined by technological, economical, ecological and political factors. Within the EU the integration processes are occurring most rapidly and effectively. The main structural elements of EU innovation system are: common market for goods, services, capital, labor, knowledge and technologies; joint research infrastructure; international network of focal points and agencies; large innovative corporations; network clusters and innovative regions; supranational funds, programs, projects and initiatives to support innovation; supranational regulatory support.

The global S&T space is extremely asymmetric and characterized by deep inequalities, manifested in the dominance of the key innovators over the rest of the countries by expenditures on R&D, high-tech exports, royalty receipts, research infrastructure development, institutional and economic conditions of economic actors. The key innovators are the United States, China, Singapore, South Korea, United Kingdom, France, Germany and Japan. Strategies of the key innovators are focused on developing their com-

petitive advantages in the global value chains to attract talents and venture capital into high technology sectors through the support of world-class research universities, innovative companies, regions and cities, promotion of cooperation between academia and business, developing breakthrough innovations in priority areas – alternative energy, green technology, ICT, bio- and nanotechnology, robotics.

The rapid development of the key innovators is based on powerful corporate innovation systems of their TNCs and world-class research universities, which have their own innovation infrastructure with specialized research units and laboratories as well as with creative corporate culture. Strategies for the most innovative companies are focused on the integration with research universities and innovative companies, providing global competitiveness through attracting of highly skilled researchers, risk and R&D costs reduction, acceleration of research through the distribution of work between the partners, concentration of corporate spending on priority projects.

The global competitiveness of Ukraine and Georgia is possible only through the completion of the national innovation systems formation ensuring the protection of intellectual property and the use of open innovation models, new research infrastructure, promotion of entrepreneurship, cooperation between business, universities and government, support international cooperation in research and venture capital attraction into high-tech sectors, promotion of nano-, bio-, info- and cognitive technologies.

### REFERENCES

- Asheim, B T., Isaksen, A.** (2002), «Regional innovation systems: The integration of local ‘sticky’ and global ‘ubiquitous’ knowledge». *Journal of Technology Transfer*, 27, 77-86. [in English]
- Atkinson R.** (2013). The decline of America’s national innovation system [Online]. Retrieved from: <http://republic3-0.com/decline-americas-national-innovation-system/> [in English]

- Carayannis, E., Campbell, D.** (2011). Mode 3 Knowledge Production in Quadruple Helix Innovation Systems: 21st-Century Democracy, Innovation, and Entrepreneurship for Development. Springer. [in English]
- Chesbrough, H.** (2003). Open Innovation: The new imperative for creating and profiting from technology. Harvard Business School Publishing Corporation. [in English]
- Cooke, P.** (1992). Regional innovation systems: Competitive regulation in the New Europe. *Geoforum* 23, 365- 382. [in English]
- Cooke, P., Asheim, B. et al.** (2011). Handbook on Regional Innovation and Growth. [in English]
- Cornell University, INSEAD, and WIPO (2017): The Global Innovation Index 2017: Innovation Feeding the World, Ithaca, Fontainebleau, and Geneva. [in English]
- Edquist, Ch.** (1997). Systems of Innovation: Technologies, Institutions and organizations. [in English]
- Edquist, Ch., Zabala, J.M.** (2009). Outputs of Innovation Systems: European perspective, CIRCLE Electronic Working Paper Series. [in English]
- Ernst, D.** (2002). Global production networks and the changing geography of innovation systems. Implications for developing countries. *Econ.Innov. New Techn.*, 11(6), 497-523. [in English]
- Etzkowitz, H.** (2008). The Triple Helix: Industry, University, and Government in Innovation. Taylor & Francis. [in English]
- Fagerberg, J., Mowery, D., Nelson, R.** (2005). The Oxford Handbook on Innovation. Oxford University Press. [in English]
- Fallah, M.H., Lechler, T.** (2008). Global innovation performance: Strategic challenges for multinational corporations. *Journal of Engineering and Technology Management*, 25, 58-74. [in English]
- Freeman, C.** (2002). Continental, National and Sub-national Innovation System-complementarily and Economic Growth. *Research Policy*, 31, 191 – 211. [in English]
- Freeman, C.,** (1987), *Technology Policy and Economic Performance: Lessons from Japan*. Pinter, London. [in English]
- Godin, B.** (2007). National innovation System: The System Approach in Historical Perspective. [in English]

- Herstad, S.** et al (2008). Open innovation and globalization: theory, evidence and implications. [in English]
- Kominos, N.** (2013). *Intelligent Cities: Innovation, Knowledge Systems and Digital Spaces*. Routledge. [in English]
- Lundvall, B.-Å.** (1988), 'Innovation as an Interactive Process: from User-Producer Interaction to the National System of Innovation', in Dosi, G. et al. (eds.), *Technical Change and Economic Theory* (London: Pinter), 349-369. [in English]
- Lundvall, B.-A., Johnson, B., Andersen, E.S., Dalum, B.** (2002). National systems of production, innovation and competence building, *Research Policy*, 31, 213-231. [in English]
- Malerba, F.** (1999). Sectoral Systems of innovation and production. [in English]
- Metcalf, S.** (1995). The Economic Foundations of Technology Policy: Equilibrium and Evolutionary Perspectives, in P. Stoneman (ed.), *Handbook of the Economics of Innovation and Technological Change*. Blackwell Publishers, Oxford (UK)/Cambridge (US), 409-512. [in English]
- Nelson, R.** (1993). *National Innovation Systems: a comparative analysis*. Oxford University Press. [in English]
- North, D.** (1994). Economic performance through time. *American Economic Review*, 84(3) [in English]
- OECD (1997). *National innovation systems*. OECD Press. [in English]
- OECD (2008). *Open Innovation in Global networks*. OECD Press. [in English]
- OECD (2012). *Science, Technology and Industry Outlook* OECD Press. [in English]
- Ortiz, M. (2013). *Varieties of Innovation Systems: The Governance of Knowledge Transfer in Europe*. Campus Verlag,. [in English]
- Patel, P., Pavitt, K.** (1994), The Nature and Economic Importance of National Innovation Systems, *STI Review*, 14. [in English]
- R&D Magazine (2017). *Global R&D Funding Forecast*. [in English]
- Wixted, B.** (2009). *Innovation System Frontiers: Cluster Networks and Global Value*. [in English]
- World Economic Forum (2016). *The Global Competitiveness Report 2016–2017*. [in English]

### **3.3. Intellectual potential of economic development in global environment: Georgia and Ukraine**

The fourth industrial revolution leads to further reorientation and intensification of the use of technology in production, the use of robotics, networking, etc. In these conditions, only innovative-oriented economies are competitive. The role of intellectual development factors in the new conditions is changing. Classical education ceases to be the only driving force for the development of society [31]. According to some scientists, the system of education and training of specialists for the labor market in the modern world undergoes significant changes. The characteristics of the market are offshoring of the labor market, the change in the structure of production, the development of opportunities through technology and networking, the active export of services. Leadership in this aspect is seen as managing change in the business environment [32, p.16].

The extraordinary role of intellectualization of the economy is undeniable, because “world experience shows that in the economy, which is based more on ideas, and less on physical capital, the probability of successful breakthroughs is growing” [33, pp.16-17].

This issue is especially relevant for developing countries. Finding directions for further development is the basis of the success of the economy in

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31 What role will education play in the Fourth Industrial Revolution? // WEF. – 2016. – [Electronic resource] Retrieved from: <https://www.weforum.org/agenda/2016/01/what-role-will-education-play-in-the-fourth-industrial-revolution/> [in English]

32 Blinder A. Education for the Third Industrial Revolution / Alan S. Blinder // CEPS Working Paper No. 163. – 2008. – [Electronic resource] Retrieved from: <https://www.princeton.edu/ceps/workingpapers/163blinder.pdf>. [in English]

33 Butnik-Siverski O.B. Intellectualni kapital: teoretichni aspekt // Intellectualni kapital. – 2002 – №1. – 47c. [in Ukrainian]

the global economic environment. The basis for such development is, first of all, intellectual capital.

In developing countries, intellectual capital is not the main source of income and, according to estimates of scientists, has a lower value compared to the average world value. For instance, if the average world value is at 29.99 points, then, for example, Ukraine has only 22.14, which is almost twice less than the leading indicator in Finland [34]. Such indicators are the result of the lack of a scientific and innovation sphere among the priorities of the state's development, which is unacceptable in the transition to a knowledge economy.

In general, one of the key indicators of the country's position on the world economic map is the size of its GDP. For developed countries, in a transition to a knowledge economy, such indicator is not only the size of GDP, but also its structure: the share of intellectual industries, the level of added value, etc. The share of intellectual industries in the structure of GDP in Ukraine and Georgia is not very high. In particular, the share of education in the structure of GDP is no more than 5%, and in general, Ukraine has a downward trend, while in Georgia, it is a stable indicator of about 4% of GDP (Fig. 3.5)

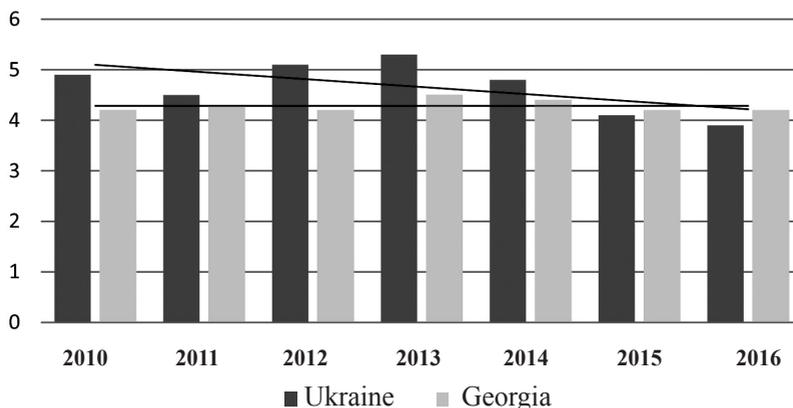
At the same time, the largest part of Ukraine's GDP in 2016 was formed by wholesale and retail trade (13.92%), processing industry (12.02%), as well as agriculture, forestry and fisheries (11.63%), which in total amount for almost 40 % of GDP [35]. The same structure has been observed in recent years for Georgia, where only wholesale and retail trade account for almost

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34 Grishnova O.A. Intellectualny kapital Ukraini: integralna otsinka I porivnialni analiz / O. Grishnova, A. Kozlovski // Ukraine: aspect praci. – 2014. – №1. – С. 3–9. [in Ukrainian]

35 State statistics service of Ukraine [Electronic resource] Retrieved from: [www.database.ukrstat.gov.ua](http://www.database.ukrstat.gov.ua) [in Ukraine]

15% of GDP, agriculture and the processing industry together make up almost 20% [36].



**Fig.3.5. Share of education in GDP Ukraine and Georgia, % [37][38]**

Both Ukraine and Georgia have a significant intellectual potential, which, however, does not turn (or not effectively turns) into capital. It should be noted that despite the rather close structure of the economies, Georgia is at the highest level in terms of technological readiness - at 72<sup>nd</sup> position, while Ukraine is at 86<sup>th</sup> [39, 40]. However, overall, such positions in the group of 140 countries indicate a rather low level of readiness.

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36 Higher Education [Electronic resource] Retrieved from: [http://geostat.ge/index.php?action=page&p\\_id=2105&lang=eng](http://geostat.ge/index.php?action=page&p_id=2105&lang=eng) [Electronic resource] Retrieved from:

37 State statistics service of Ukraine [Electronic resource] Retrieved from: [www.database.ukrstat.gov.ua](http://www.database.ukrstat.gov.ua) [in Ukraine]

38 Higher Education [Electronic resource] Retrieved from: [http://geostat.ge/index.php?action=page&p\\_id=2105&lang=eng](http://geostat.ge/index.php?action=page&p_id=2105&lang=eng) [in English]

39 Ukraine // WEF. – 2016. – [Electronic resource] Retrieved from: <http://reports.weforum.org/global-competitiveness-report-2015-2016/economies/#economy=UKR>

40 Georgia // WEF. – 2016. [Electronic resource] Retrieved from: <http://reports.weforum.org/global-competitiveness-report-2015-2016/economies/#economy=GEO>

The potential of the country is confirmed by rather high rates of coverage of higher education. In general, according to ranking the World Economic Forum, Ukraine ranks 34<sup>th</sup> among 140 countries by the sub-index “higher education” [41]. By the same indicator, Georgia is 87<sup>th</sup> [42].

Indicators of intellectual potential of the economy are the network of scientific institutions, financing of education and science, ability of integration in global intellectual flows, the structure and quality of scientific personnel, innovation activity, business activity, etc.

In Ukraine, there is a quite extensive network of organizations that carry out research, but almost 50% of them operate in the public sector (Table 3.2)

**Table 3.2**  
**Research and development organizations by sector of activity [43]**

	<b>2010</b>	<b>2015</b>	<b>2016</b>
<b>Total</b>	1303	978	972
Government	514	433	453
Business enterprise	610	394	366
Higher education	178	151	153
Private non-profit	1	-	-

A private non-profit sector is not represented in Ukraine by any research institution or organization that carries out research and development. The higher education sector occupies only 15% of the market. In recent years, the number of scientific institutions has decreased. For instance, in the peri-

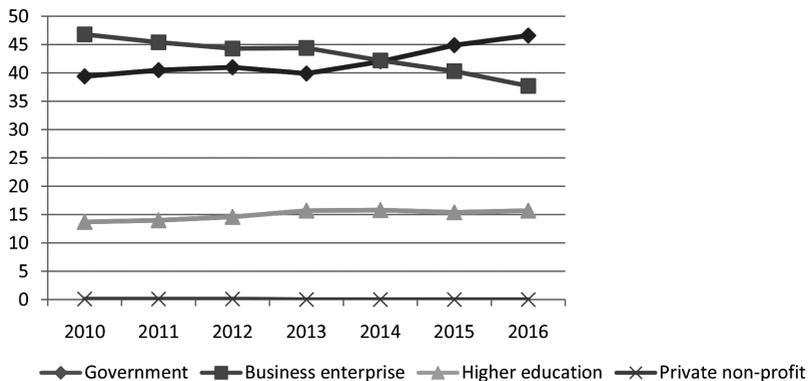
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41 Ukraine // WEF. – 2016. – [Electronic resource] Retrieved from: <http://reports.weforum.org/global-competitiveness-report-2015-2016/economies/#economy=UKR>. [in English]

42 Georgia // WEF. – 2016. – [Electronic resource] Retrieved from: <http://reports.weforum.org/global-competitiveness-report-2015-2016/economies/#economy=GEO> [in English]

43 Nauka, technologii ta innovacii. – 2017. – [Electronic resource] Retrieved from: [http://www.ukrstat.gov.ua/druk/publicat/kat\\_u/publnauka\\_u.htm](http://www.ukrstat.gov.ua/druk/publicat/kat_u/publnauka_u.htm). [in Ukrainian]

od from 2010 to 2016, their total number has decreased by more than 25%, of which nearly 75% are enterprises of the enterprise sector. In general, the reduction of scientific institutions in the business sector is more than 40%, which is generally a negative trend (Fig. 3.6)



**Fig.3.6. Dynamics of distribution of research organizations by sector of activity, % [44]**

The next prerequisite for the development of Ukraine’s intellectual capital is financing of R&D. Although the overall level of research and development spending is increasing, and overall, the increase from 2010 is more than 40%, but the share of these costs is extremely low. For instance, in 2016, the total amount of funds for scientific development was UAH 11,530.7 million, or only 0,48% of GDP. Of these, the state budget share was 0.16% [45]. R&D financing structure is not very diversified (Table 3.3)

44 Nauka, technologii ta innovacii. – 2017. – [Electronic resource] Retrieved from: [http://www.ukrstat.gov.ua/druk/publicat/kat\\_u/publnauka\\_u.htm](http://www.ukrstat.gov.ua/druk/publicat/kat_u/publnauka_u.htm). [in Ukrainian]

45 Naukova ta innovaciina dialnist Ukrainii / State statistics service of Ukraine. – Київ – 2017. – 134 s. [in Ukrainian]

**Table 3.3**

**Funding R&D by sources (%), 2013 [46],[47]**

	<b>Georgia</b>	<b>Ukraine</b>
Business enterprise	0	29.1,172
Government	46.74,145	47.73,454
Higher education	36.05,769	0.18,367
Private non-profit	3.1,161	0.01,792
Funds from abroad	14.69,017	21.60,629
Not specified	0.44,516	1.34,037

As you can see, the business sector is not represented at all in the financing structure of Georgia, while in Ukraine, it is almost 30%. Both in Ukraine and Georgia, main funding of R&D falls on the public sector, which, on the one hand, indicates a significant role of the government, and the other - a lack of presence of an extensive network of investors in this sector. It is possible to attribute to the strengths of the Ukrainian economy a significant proportion of funds received from abroad. In Georgia, the strength is the significant participation of institutions of higher education in R&D financing (36%).

The allocation of financial resources depending on the sphere of activity is important to determine the technological readiness (Table 3.4)

In general, in Georgia, this distribution is more uniform and is generally distributed by 15-20% for each sector of activity. In Ukraine, this indicator is not so univocal and almost 60% is spent on engineering science and technology, which in general may indicate potential for increasing capacity.

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46 Science, Technology and Innovation [Electronic resource] Retrieved from:<http://uis.unesco.org/en/country/ua?theme=science-technology-and-innovation> [in English]

47 Science, Technology and Innovation [Electronic resource] Retrieved from: <http://uis.unesco.org/en/country/ge?theme=science-technology-and-innovation> [in English]

**Table 3.4**

**Funding R&D by field of activity (%), 2013**

	<b>Georgia</b>	<b>Ukraine</b>
Natural sciences	14.24,501	21.41,993
Engineering & technology	21.81,268	57.6,574
Medical sciences	14.69,017	3.94,226
Agricultural sciences	0	5.69,926
Social sciences	15.58,048	5.15,809
Humanities	17.36,111	1.74,804
Not specified	2.67,094	4.37,502

Ratio of research spending of less than 0.5% (Ukraine) and 0.32% (Georgia<sup>48</sup>) is generally not natural for developed countries. The average indicator for the countries of the European Union is 2.03% (Table 3.5). It should be noted that in Georgia, there are tendencies of improvement, and in general, the level of spending increased twice in a rather short period - even in 2014, these costs were 0.16% of GDP.

Less than 1% of GDP for R&D is also spent by Serbia, Kenya, Iran, Morocco, Argentina, Mexico, Egypt, Chile, Pakistan, Nigeria, Thailand, Colombia, Indonesia and Saudi Arabia. [<sup>49</sup>]. As we see, the vast majority of developed countries spend more than 2% of GDP on financing, and some of them more than 4% (for example, South Korea).

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48 Research and development expenditure (% of GDP) [Electronic resource] Retrieved from: <https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?end=2015&locations=GE-UA&start=1996&view=chart> [in English]

49 International comparisons of gross domestic expenditures on R&D and R&D share of gross domestic product, by region/country/economy: 2013 or most recent year. – 2016. – [Electronic resource] Retrieved from: <https://www.nsf.gov/statistics/2016/nsb20161/uploads/1/7/tt04-04.pdf>. [in English]

Table 3.5

**Grouping countries by level of research and development costs,  
% of GDP, 2016 [50], [51] [52]**

> 3%	2-2,99%	1-1,99%	0,5-0,99%	< 0,49%
Sweden, Austria, Japan, South Korea	Germany, Denmark, Finland, Belgium, Iceland, Norway, Netherlands, Slovenia, <b>EU-27</b> , USA, China	United Kingdom, Czech Republic, Italy, Estonia, Portugal, Luxembourg, Hungary, Spain, Ireland, Russia	Greece, Poland, Croatia, Slovakia, Bulgaria, Lithuania, Malta, Cyprus, Serbia, Turkey	Romania, Latvia, <b>Ukraine</b> , <b>Georgia</b>

The potential of the economy for innovation growth is also confirmed by the training of scientific staff, which is carried out in the vast majority in the form of post-graduate and doctoral education. According to the State Statistics Service of Ukraine, 71% of postgraduate students and 87% of doctoral students study using state budget funds, and the share of passed academic works is only 26% for candidate theses and 28% for doctoral ones (Table 3.6).

It can be noted that in Ukraine, there is a gradual decrease in the number of applicants of scientific degree, the number of postgraduate students decreased by 25%, doctoral students by only 3%, but the number of passed dissertations defense has generally increased. Such indicators can confirm the ability of Ukraine to transit to a knowledge economy.

50 Science, Technology and Innovation [Electronic resource] Retrieved from: <http://ec.europa.eu/eurostat/web/science-technology-innovation/data/main-tables> [in English]

51 Naukova ta innovaciina dialnist Ukrainii / State statistics service of Ukraine. – Київ – 2017. – 134 s. [in Ukrainian]

52 Research and development expenditure (% of GDP) [Electronic resource] Retrieved from: <https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?end=2015&locations=GE-UA&start=1996&view=chart> [in English]

**Table 3.6**

**Indicators of activities on the training of scientific staff in Ukraine [53]**

Indicators of activities on the training of scientific staff in Ukraine [53]	Graduate school			Doctorate		
	2010	2015	2016	2010	2015	2016
Number of institutions with the corresponding training program	530	490	481	263	283	282
Number of competitors by the end of the year, persons	34653	28487	25963	1561	1821	1792
Admission for the program for the year, individuals	10626	9813	6609	603	650	584
Certified total, individuals	8290	7493	6703	459	563	551
- including those with the defense of the dissertation	1954	1958	1708	132	169	153

In Georgia, there is also a gradual decrease in the number of applicants of scientific degree, but over the past 6 years, the reduction was less than 5% in total. However, the total number of applicants in Georgia is 7 times lower than in Ukraine (Table 3.7).

**Table 3.7**

**Indicators of activities on the training of scientific staff in Georgia [54]**

	2011	2012	2013	2014	2015	2016
Number of persons working for doctoral degree, total	4266	3040	3213	3410	3765	4076
Admission for doctoral degree	1045	838	1095	1203	1215	1305
Certified total	270	406	450	349	369	469

It is worth noting that not only the number of scientific employees is important, but also the directions of their training. The potential for the active transition of Ukraine to the knowledge economy is quite significant. The readiness of the economy can be determined by training specialists in

53 Naukova ta innovaciina dialnist Ukrainii / State statistics service of Ukraine. – Київ – 2017. – 134 s. [in Ukrainian]

54 Higher Education [Electronic resource] Retrieved from:[http://geostat.ge/index.php?action=page&p\\_id=2105&lang=eng](http://geostat.ge/index.php?action=page&p_id=2105&lang=eng) [in English]

physics, mathematics, chemistry, biology, pharmaceuticals, medicine, etc. In Ukraine, the training of specialists in the mentioned areas is almost 35% of the total number of applicants of scientific degree [55]. At the same time, post-graduate students by the given directions are about 36%, and applicants of the degree of doctor of sciences - 34%.

In Georgia, there is a slightly different gradation of training, but in general, the trend is similar and a significant proportion of scientists focus on engineering specialties, although generally prevailing is training of specialists in economics, jurisprudence and social sciences (Table 3.8)

**Table 3.8**

**Number of persons working for doctoral degree by field of science in Georgia, individuals [56]**

	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Education	135	235	164	143	153	132
Humanities and Arts	756	634	570	612	686	713
Social sciences, business and law	2096	919	1304	1376	1639	1784
Science	564	607	508	517	526	629

Despite the large number of applicants for scientific degree in Ukraine, there is a fairly small share of research workers in the total number of occupied population - only 0.6%, which is almost five times less than in Iceland or Denmark. In general, the average indicator of scientific and technical staff and researchers in the European Union is 1.84%, and only Romania has lower indicator than Ukraine [57]. In general, the number of researchers and research staff is the highest in the developed countries (Table 3.9)

55 Naukova ta innovaciina dialnist Ukrainii / State statistics service of Ukraine. – Київ – 2017. – 134 s. [in Ukrainian]

56 Higher Education [Electronic resource] Retrieved from: [http://geostat.ge/index.php?action=page&p\\_id=2105&lang=eng](http://geostat.ge/index.php?action=page&p_id=2105&lang=eng) [in English]

57 Science, Technology and Innovation [Electronic resource] Retrieved from: <http://ec.europa.eu/eurostat/web/science-technology-innovation/data/database> [in English]

**Table 3.9**

**Researchers in R&D global leaders country (per million people) [58]**

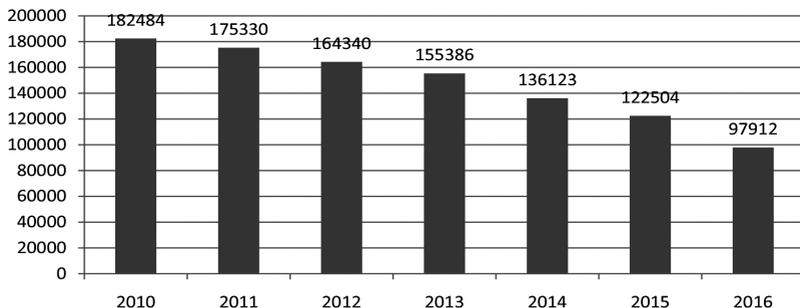
Country	2010	2011	2012	2013	2014	2015
<i>European Union</i>	3221,998376	3239,656067	3343,722794	3435,751432	3487,277883	3485,361939
<i>OECD members</i>	3349,363508	3425,547871	3481,681107	3520,226432	3960,953926	..
<i>High income</i>	3846,15572	3921,401639	3985,17227	4043,933253	4143,52303	..
Denmark	6743,89777	7025,99462	7155,95436	7088,55317	7333,05129	7483,57626
Sweden	5255,85579	5146,9233	5163,74727	6670,02831	6868,11332	7021,88452
Finland	7717,4749	7413,63475	7460,10245	7187,92619	6985,94438	6816,7699
Norway	5407,81898	5496,22574	5547,82064	5569,44595	5679,32603	5915,60069
Iceland	..	7034,54506	..	5679,51886	..	5902,52713
Japan	5152,63132	5160,2046	5083,74949	5201,31659	5386,15362	5230,72444
Luxembourg	5144,98247	5444,29508	4338,9129	4594,52912	4723,54929	5058,27794
Austria	4359,02777	4405,9524	4695,26438	4763,25922	4883,85702	4955,03234
Belgium	3735,82335	3878,70007	4115,45454	4156,24432	4175,88236	4875,33622
Ireland	3070,16993	3281,74051	3481,89409	3605,94126	4433,47014	4575,19636
<i>Georgia</i>	..	..	..	561,63442	1059,61573	1288,26555
<i>Ukraine</i>	1332,19791	1261,86049	1234,66158	1165,1822	1026,40749	1005,99722

The leaders in the number of scientific and research staff are highly developed countries, and the average indicator for such countries is about 4 thousand people per 1 million population. However, both Ukraine and Georgia have indicators at least 4 times lower. It is interesting that considering the significantly higher rates of Ukraine's scientific training as compared to Georgia, there is an extremely small number of researchers per 1 million people, 20% lower than Georgia's indicators, indicating a low effectiveness of training of scientific personnel (which is also confirmed by a low level of thesis defense). While in Georgia, the number of scientists is constantly increasing, in Ukraine, the dynamics have the opposite direction.

Leading countries have a quite large share of scientific and technical staff of the total amount of labor force. Ukraine, with an index of 0.6%, belongs

58 World Development Indicators [Electronic resource] Retrieved from: [http://data-bank.worldbank.org/data/reports.aspx?source=world-development-indicators#\[in English\]](http://data-bank.worldbank.org/data/reports.aspx?source=world-development-indicators#[in English])

to outsiders. Such indicators in the context of the transition to a knowledge economy are unacceptable. Moreover, since 2010, their number is constantly decreasing (Fig. 3.7)



**Fig.3.7. The number of R&D workers, 2010-2016 years, individuals [59]**

During the specified period, the number of workers involved in research activities decreased by more than 46%, and in the fourth industrial revolution, it is unacceptable for formation of a knowledge economy. In general, such situation may indicate negative trends and a decrease of intellectual potential of Ukraine.

Both economies have rather similar problems. In general, to ensure the development of intellectual potential of Ukraine and Georgia, it is required to develop new mechanisms of public-private partnership, co-financing, regulation of technology transfer, etc. Taking into account the analyzed data, key areas for the expansion of intellectual potential are the creation of an effective system of financing, the promotion of business involvement in the scientific sector, promotion of the growth of the presence of the business sector, increased R&D funding, increased results of research employees' training, their qualitative and quantitative distribution, and, as a result, an increase in the number of scientific, technical staff and researchers.

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59 Naukova ta innovaciina dialnist Ukrainii / State statistics service of Ukraine. – Київ – 2017. – 134 s. [in Ukrainian]

**REFERENCES:**

- Blinder A.** Education for the Third Industrial Revolution / Alan S. Blinder // CEPS Working Paper No. 163. – 2008. – [Electronic recourse] Retrieved from: <https://www.princeton.edu/ceps/workingpapers/163blinder.pdf>. [in English]
- Butnik-Siverski O.B.** Intelektualni kapital: teoretichni aspekt // Intelektualni kapital.– 2002 – №1. – 47c.[in Ukrainian]
- Georgia // WEF. – 2016. – [Electronic recourse] Retrieved from: <http://reports.weforum.org/global-competitiveness-report-2015-2016/economies/#economy=GEO> [in English]
- Grishnova O.A.** Intelektualny kapital Ukraini: integralna otsinka I porivnialni analiz / O. Grishnova, A. Kozlovski // Ukraine: aspekt praci. – 2014. – №1. – С. 3–9. [in Ukrainian]
- Higher Education [Electronic resource] Retrieved from: [http://geostat.ge/index.php?action=page&p\\_id=2105&lang=eng](http://geostat.ge/index.php?action=page&p_id=2105&lang=eng) [in English]
- International comparisons of gross domestic expenditures on R&D and R&D share of gross domestic product, by region/country/economy: 2013 or most recent year. – 2016. [Electronic resource] Retrieved from: <https://www.nsf.gov/statistics/2016/nsb20161/uploads/1/7/tt04-04.pdf>. [in English]
- Nauka, tehnologii ta innovacii. – 2017. – [Electronic resource] Retrieved from: [http://www.ukrstat.gov.ua/druk/publicat/kat\\_u/publnauka\\_u.htm](http://www.ukrstat.gov.ua/druk/publicat/kat_u/publnauka_u.htm). [in Ukrainian]
- Naukova ta innovaciina dialnist Ukrainii / State statistics service of Ukraine. – Київ – 2017. – 134 s. [in Ukrainian]
- Research and development expenditure (% of GDP) [Electronic resource] Retrieved from: <https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?end=2015&locations=GE-UA&start=1996&view=chart> [in English]
- SScience, Technology and Innovation [Electronic resource] Retrieved from:<http://ec.europa.eu/eurostat/web/science-technology-innovation/data/database> [in English]
- Science, Technology and Innovation [Electronic resource] Retrieved from: <http://uis.unesco.org/en/country/ua?theme=science-technology-and-innovation> [in English]

- Science, Technology and Innovation [Electronic resource] Retrieved from:<http://uis.unesco.org/en/country/ge?theme=science-technology-and-innovation> [in English]
- Science, Technology and Innovation [Electronic resource] Retrieved from: <http://ec.europa.eu/eurostat/web/science-technology-innovation/data/main-tables> [in English]
- State statistics service of Ukraine [Electronic resource] Retrieved from: [www.database.ukrstat.gov.ua](http://www.database.ukrstat.gov.ua) [in Ukraine]
- Ukraine // WEF. – 2016. – [Electronic resource] Retrieved from:<http://reports.weforum.org/global-competitiveness-report-2015-2016/economies/#economy=UKR> [in English]
- What role will education play in the Fourth Industrial Revolution? [Електронний ресурс] // WEF. – 2016. – [Electronic resource] Retrieved from: <https://www.weforum.org/agenda/2016/01/what-role-will-education-play-in-the-fourth-industrial-revolution/>. [in English]
- World Development Indicators [Electronic resource] Retrieved from: <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#> [in English]

### **3.4. Higher Education's Funding Model Transformation Of Georgia And Ukraine In The Context Of Integration To The European Higher Education Area**

The development of higher education nowadays is undergoing the huge changes not only under the impact of knowledge-based economy and competency based economy but and under the 4th Industrial revolution, which, as was noted at the World Economic Forum in 2017, must change the requirements to higher education of improving the research activities of universities and the process of commercialization of their results. In this regard the actuality of idea of Triple Helix are more increasing under these condi-

tions, because it determines that the potential for innovation and economic development in a Knowledge Society [knowledge-based economy and competency based economy] lies in a more prominent role for the university and in the hybridization of elements from university, industry and government to generate new institutional and social formats for the production, transfer and application of knowledge [11].

Thus, the current situation in global world demonstrates, that to take advantages of global economy – there is insufficient of using general types of economic resources, the most needed resource is becoming – human capital. However, the main feature of human capital is the inherency of valuable characteristics to the person, among which, we consider, education is prevailing, because according to the modern paradigm of human existence, the new knowledge and global thinking are in basis of which, the aim of building of the human society should become education, on the tasks of the continuous human development, the forming by her the possibility of critical thinking and objectivity in decision making and also the social activity in actions. As a result, the global economy requires the necessity to the governments of the countries to strengthen attention to the improving of quality of training the personnel, that can be done primarily through the effective education system, which is a producer of human potential and human capital, in particular [7]. But, the creation knowledge-based capital is possible through the funding in education, the results of which can be scientific investigations and innovations, which in total are the bases of knowledge-based economy and ensure the long term growth of any country. As an evidence the following affirmation, that the weakest national systems [systems of higher education] are those with low government funding but high government control [16].

Moreover, the development of economies within the global environment is becoming more dependent from the systems of higher education, which every year becomes more capital-needed [6]. This leads to increased the demand for the funding models that would ensure the effectiveness of higher ed-

ucation. The problem of effective financial mechanism is inherent mainly for the countries with transition economies, but in is lack of effective ('smart') mechanism as the management of financing of system of higher education in general, due to the issue of necessary the active institutional reforms.

For example, in developed countries, regardless of the model of the state management of higher education (marketed (the UK), social (the Nordic) and mixed (the Central Europe)), which are defined, the firstly, its traditions and historical specificities of formation the educational system and as well as related with a mode of ensuring the welfare of population (liberal, social democratic, conservative-corporatist), the systems of higher education demonstrate the effective funding mechanism for higher education, as a result, the highest position of their national system of higher education in the context of international comparisons. That is why the aspect of funding model in terms of its impact on the development of higher education of Ukraine is so relevant in comparing the main trends in European Educational Space, because it has to ensure the development of higher education under conditions of the intensification of the global environment. Moreover, the research of reforming process in the field of higher education in Georgia is so relevant too in regard of the constant comparative analysis of the national economy with Georgia's economy.

The main aim of paper is to examine the contribution of funding model on the development of system of higher education. This aim will be received with the helping of the next objectives:

- to assess the impact of funding on the country's place in the ranking by analyzing the changes in funding and the country's position;
- to conduct the correlation and regression analysis of such indicators as the funding in higher education and the total score of ranking, to test the hypothesis of their dependence;
- to evaluate the structure of funding and the accordance between the established tuition fees and required expenditures on providing the educational service;

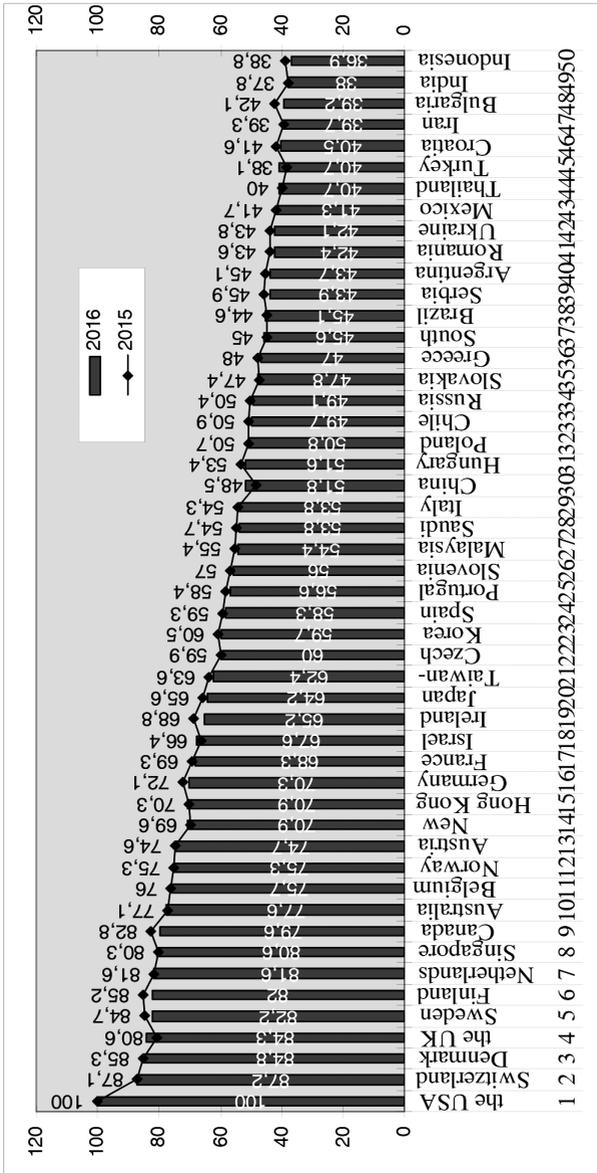
- to consider the basic theoretical models of funding of higher education, their advantages and disadvantages.

The methodological basis of conducting this research is the theoretical approaches to the concept of current models of funding of higher education. To make the reasonable conclusion of necessity of some funding model was defined to hold the analysis the data of unique annual ranking of higher education - Universitas 21 and Indicators of Higher education, which were held by OECD, these data became the empirical basis of research, then carrying out the correlation and regression analysis between indicators and evaluation the structure of expenditure and its comparing in different countries, prerequisites for established tuition fees and the real costs, which are needed for preparation the graduates.

The core of research is in hypothesis, the funding model of the sphere of higher education does impact on its development and quality of educational service and, as results, in total on economic indicators of this country. Then, Besides, it is very important to study the theoretical approaches to the essence of existing models of funding, identifying the opportunities for both implementation in Ukraine and in Georgia.

The Universitas 21 Ranking is one of the world to assess national higher education systems, which was developed the Rankings as a benchmark for governments, education institutions and individuals, and the project aims to highlight the importance of creating a strong environment for higher education institutions to contribute to economic and cultural development, provide a high-quality experience for students, and help institutions compete for overseas applicants. U21 points to the best educational systems of each country and includes four areas, in particular: «Resources», «Environment», «Connectivity» and «Output». According to the Figure 1, we can observe, that the strongest systems of higher education are in the USA, Switzerland, Denmark, the UK and Sweden. The Ukraine took 42th place with 42.1 score, which are the less, than in Ranking of 2015 (43.8 score) [13]. Georgia, de-

Figure 1. The comparative analysis of the Universitas 21 Ranking in 2015-2016 years



Source: formed by author based on [15]

spite on the active process of reforming and the implementation of the principles of the European Higher Education Area, is not included in any of these ratings.

Taking into account the fact that Georgia is not included in the TOP-50 of the best higher education systems, we consider it necessary to examine in more detail its position in the geocontext.

According to the results of a survey conducted in 2014, in Georgia, the level of adolescent reading is lower than the average.

In the primary classes, in the interpretation and transmission of content, Georgia is the 37th place among 45 countries of the world. By the level of school education, Georgia has not high position too.

In 2017, school final exams out of 48,434 students could not pass 12,803, and 30% did not come to the examination in the initial subjects.

As result, according to the World Competitiveness report, the second most problematic factor for doing business in Georgia is insufficiently educated workforce.

The Component ‘Higher education and training’ in Georgia is estimated by the World Economic Forum as 92 out of 148 positions of the world, which is much less than the position of Ukraine. The PISA’s results - 65 out of 74 positions, where 69/74 Science and 67/74 Literacy. As we know, such testing in Ukraine will take place this year (2018).

Taking into account our hypothesis as for that the funding of universities has a direct impact on the competitiveness of these universities and quality of higher education in total, necessary to compare the expenditure on higher education.

Funding of higher education all over the world is a crucial challenge for all stakeholders: governments, enterprises, university administrators, researchers and students. In developed countries, while governments provide some resources to finance higher education, there is a continuous effort on the part of university to mobilize and diversify resources to supplement what governments provide. In the most advanced countries, there has been an up-

surge in the demand for policy restructuring to reduce the over-reliance on the governments to financing higher education. At the same time, there has been a gradual shift from the provision of free higher education in countries to a system of cost sharing.

Looking at the achieved results of calculations, which concern the expenditure for higher education in absolute values, which are presented in Table 1, we see: the TOP-10 of ranking of competitiveness of higher education coincides with the TOP-10 countries with the highest spending on higher education in calculating per 10 thousand of population, that allows to reflect the real situation with financing in each country.

**Table 1**  
**Expenditure for higher education in absolute values in 2016**

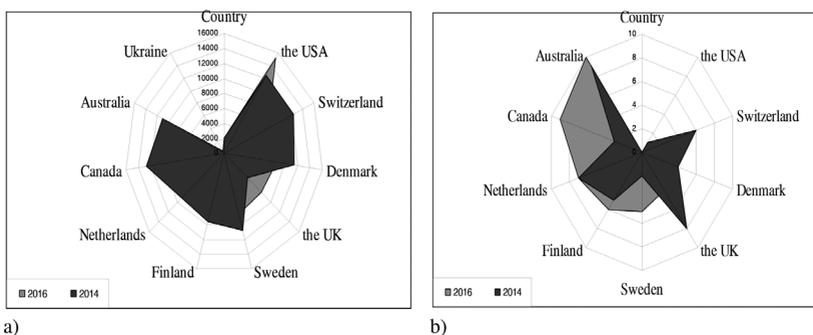
Place in the ranking of national higher education systems [15]	Country	Expenditure for HE as a percentage of GDP (%) [3]	Expenditure for HE in absolute values (billions of USD) [9]	Expenditure for HE in absolute values, per 10 thousand of population (thousands of USD) [10]
<b>1</b>	<b>the USA</b>	<b>2,6</b>	<b>482.8</b>	<b>15139</b>
<b>2</b>	<b>Switzerland</b>	<b>1,2</b>	<b>6.4</b>	<b>7712</b>
<b>3</b>	<b>Denmark</b>	<b>1,7</b>	<b>4.9</b>	<b>8575</b>
<b>4</b>	<b>the UK</b>	<b>1,8</b>	<b>50.6</b>	<b>7949</b>
<b>5</b>	<b>Sweden</b>	<b>1,7</b>	<b>8.3</b>	<b>8520</b>
<b>6</b>	<b>Finland</b>	<b>1,8</b>	<b>4.3</b>	<b>7751</b>
<b>7</b>	<b>Netherlands</b>	<b>1,7</b>	<b>14.8</b>	<b>8739</b>
<b>8</b>	<b>Singapore*</b>	<b>1.1</b>	<b>3.0</b>	<b>5557</b>
<b>9</b>	<b>Canada</b>	<b>2,5</b>	<b>40.8</b>	<b>11481</b>
<b>10</b>	<b>Australia</b>	<b>1,7</b>	<b>20.1</b>	<b>8569</b>
22	Czech Republic	1,3	4.8	4579
26	Slovenia	1,2	0.8	3906
31	Hungary	1,3	3.5	3557
32	Poland	1,4	14.8	3852
35	Slovakia	1,1	1.9	3436
42	Ukraine [17]	1,6	1.4	340

Source: formed by author based on [ 3; 9; 10; 15]

Thus, these results confirm our hypothesis. Moreover, we consider, that it's necessary to analyze the dynamics of indicator «Expenditure for HE in absolute values, per 10 thousand of population» for countries-leaders and Ukraine and then to compare the change of indicator and place of country in the ranking.

As we are taking into account, that the state funding per student in Georgia is 7,297 USD, which ranks 14th highest in the nation, that's more much higher than in the countries of Visegrad or Ukraine. But, unlike on these countries, Georgia is not represented by world ranking systems. Therefore, we consider it expedient to verify the above hypothesis.

From Figure 2 we observed that the indicators of financing of higher education have changed over the years 2014-2016, namely the United States increased the expenditure in 1.2 times, thereby was securing the first position in ranking, the UK increased the expenditure in 1.6 times, thus its position has changed from 8th to 4th, Sweden - reduced the costs in 0.8 times as a result - the position was moved from the 2 to 5, Finland has moved from the 5th position to 6th, through reducing the expenditure in 0.8 times.



**Figure 2. The comparative analysis of change of indicator and place of country in the next: a) «Expenditure for HE in absolute values, per 10 thousand of population; b) position in Universitas21 Ranking.**

**Source: formed by author based on calculation of table 1 and on [15]**

Thus, we can see the relationship between the development of higher education, component of its competitiveness in world comparison and the degree of funding. Moreover, using the Programme STATISTIKA 12.0, we conducted the correlation regression analysis and we received the next results:

The coefficient of multiple correlation (R), which shows the closeness communication the output variable (Y) from the input variable (X) is 0.8433, so the relationship between the input variables and output variables there is strong relationship.

Calculated Regression coefficient (0.72) shows how will change deterministic component of the country's position in the ranking if factor in our model - funding, changes per one unit.

Next, we consider it is necessary to analyze the structure of funding, including the share of public and private funding (Figure 3).

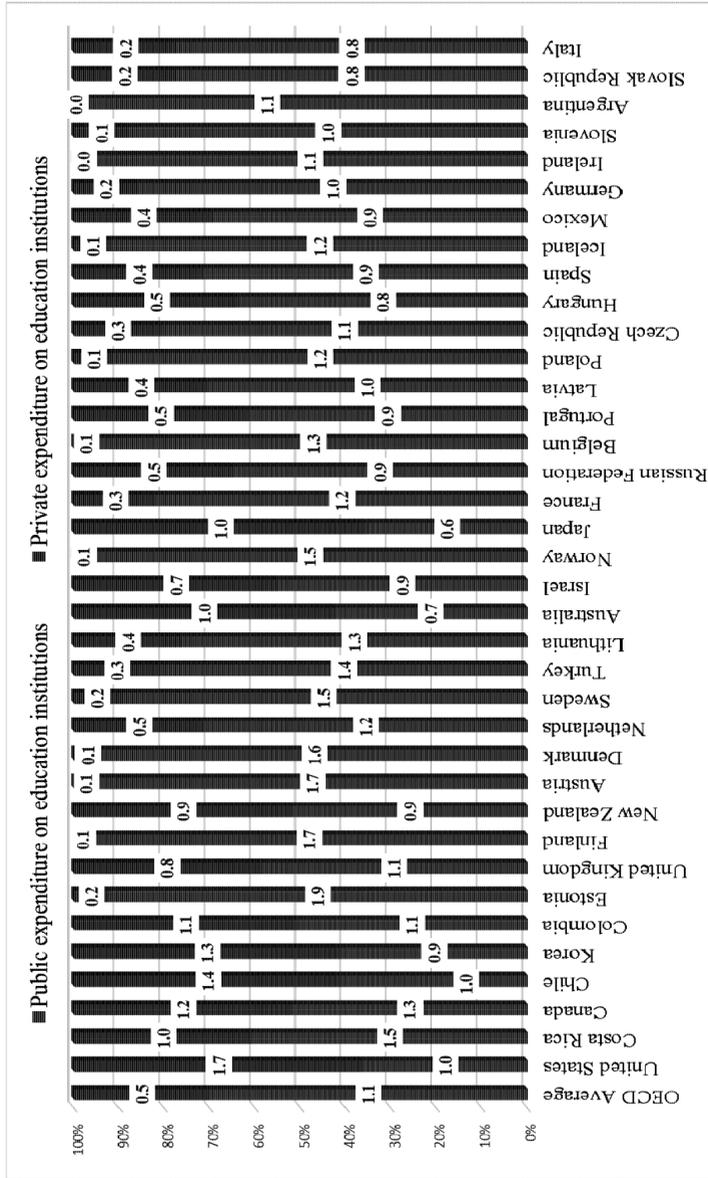
In tertiary education the private sources have a more crucial role and account for around 30% of expenditure on average or 0.5% of GDP.

In some countries, private sources are very important in relative and absolute terms to assure that a large percentage of national wealth goes into tertiary education. Canada, Chile, Costa Rica, Korea and the United States stand out as the countries with largest percentage of GDP spent on tertiary education. Part of that is explained by the fact that they are also among the countries with the highest shares of private sources. Among countries spending more than 2% of GDP on tertiary education, only Estonia has a small percentage of private sources, at 0.3% of GDP.

In the Central and Eastern Europe (Poland, Slovak Republic, Slovenia, Hungary), it is largely dominated by public funding, while the private funding is ranged from 0.1% of GDP (Poland, Slovenia) to 0.5% (Hungary).

Moreover, changes in the proportion of expenditure on tertiary education result from the combination of two trends and their respective pace: the first regards public 40 expenditure on tertiary education, and this needs to be seen

Figure 3. Public and private expenditure on higher educational institutions, as a percentage of GDP, (2013)



Source: formed by author based on [3]

in relation to total public expenditure. A constant ratio through time only indicates that both public expenditure on tertiary education and total public expenditure grew or diminished at the same rate. It suggests that tertiary education is given the same public financial priority through time. The ratio increases when public expenditure on tertiary education grows more rapidly (or declines less rapidly) than total public expenditure. Such a situation highlights that tertiary education is given a higher priority compared to other public expenditure or that it has been less severely hit by budgetary cuts than other areas of public expenditure in the framework of the consolidation of public finances.

Three groups of countries might be identified when analyzing the evolution of the share of public expenditure directed to tertiary education across the key milestones of the Bologna process (2005, 2008 and 2011) [4].

In the first group of EHEA countries (i.e. nearly half of the countries for which data is available), the percentage of total public expenditure devoted to tertiary education is higher in 2011 than in 2005. In these countries, annual public expenditure on tertiary education increased faster than the total public expenditure (or decreased at a slower pace than the total public expenditure).

Some countries that belong to this group experienced a decrease of the above-mentioned share in one of the two time periods under scrutiny (either in 2008 compared to 2005 or in 2011 compared to 2008), but this was more than compensated during the second period of time. This is for instance the case of Lithuania, Malta and the Netherlands, which experience a slight decline of the share in 2008 compared to 2005.

In Croatia and in Belgium, the stronger public effort recorded in 2008 (compared to 2005) was only partially offset by a weaker effort in 2011 (compared to 2008). In the second group of countries, public expenditure on higher education grew more or less at the same pace as total public expenditure: hence its share remained roughly unchanged in 2011 compared to 2005. In these countries, the share of total public expenditure allocated

to tertiary education changed by a maximum 0.1 percentage point in 2011 compared to 2005. This is what occurred for instance in Switzerland, Spain, Slovenia and Finland. In the third group of countries (nearly one quarter of EHEA countries for which data is available), public expenditure on tertiary education increased at a slower pace than public expenditure (or decreased more rapidly than public expenditure). In these countries, the percentage of total public expenditure devoted to tertiary education is lower in 2011 than in 2005. This is the case in Norway, Iceland and Ireland where the share of public expenditure aimed at tertiary education is respectively 0.57 percentage points, 0.42 percentage points and 0.4 percentage points lower in 2011 than in 2005.

In the other countries of this group, the decrease ranges from 0.14 percentage points in Poland to 0.36 percentage points in the United Kingdom when comparing the same reference years [4].

In Ukraine and Georgia the public funding dominates above the private. But, unlike the foreign countries, where under the private financing is considered the financing by business or invest-organizations, in Ukraine and Georgia, in fact, the private funding - is costs of householding.

Furthermore, it should be noted that the structure of expenditures of Ukrainian system of higher education is significantly different from Central European countries, namely, according to UNESCO [14].

Ukraine over the last decade has reduced the share of the costs of equipment, construction and modernization in total spending in higher education from 17% to 4%, while the Czech Republic (20%), Poland (22%) and Lithuania (25%) were increased it. Thus under these moments was reduced the potential of high level of practical preparation of students in comparison with foreign countries.

In addition, in more detail, it is necessary to consider the peculiarities of the system of higher education in Georgia after the reforms' implementation, in particular:

- model for funding a university - an individual financing system: “money follows the student”. So the budget of the university depends on the number of students. In relation to universities, it is considered to applicants who successfully passed the entrance examinations and received funding from the state (grant). The university with a small number of students (provincial or high-mountainous) receive an additional subsidy. There is paid training too.
- the introduction of unified entrance examinations to universities eradicated corruption upon admission. Exams are held on the same day on a single program. They are conducted by a separate organization, independent from the Ministry of Education, the National Examination Center (as like in Ukraine from 2008);
- the improved standards of training, retraining of staff, certification of teachers - all this contributes not only to the development of the pedagogical staff, but also the interest of teachers in it. The salary of the teaching staff is directly related to the passage of certification and the receipt of a license for education;
- universities undergo mandatory certification, which takes into account not only the qualifications of lecturers, but also the area (the number of students depends on it), the availability of a library, a modern material and technical base and even a sports ground.

In 2017, school final exams out of 48,434 students could not pass 12,803 (26.4% of the total), and 30% of applicants to the universities did not come to the exam in the initial subjects.

Ukraine is unable fully to ensure financial needs of the system of higher education, that leading to the following problems:

- the logistical facility of Ukrainian universities is outdated and does not correspond to the modern needs of graduates’ training;
- there is no funding for participating of teaching staff in various activities outside Ukraine for the information sharing and increasing the collaboration between colleagues;

- a limited financial provision to conduct the full laboratory research at the universities;
- salaries of the teaching staff and the regulatory policy of employment of teaching staff (load on professor) looks like as demotivator of holding the scientific researches or totally engaging in science.

In addition, due to the funding of higher education in Ukraine, this amount is enough only to pay salaries to professors and the providing the educational services to students. However, taking into account the fact, that the requirements for the training of graduates are increasing every year, and the state is not able to provide a fully free education - university has to set the tuition. The latter is quite common practice in the world. But if we consider the structure of tuition fees in Ukraine we are observing the funding by state or by households, the financing by business structures is not popular. As a result, the universities can not set the tuition fees at the real need for the provision of educational services of European dimension, because the purchasing power of population is low because universities are set the tuition fees at a level, which the house holding can pay and not at the level of the tuition fees, which would reflect the necessary costs on providing the educational services of appropriate quality.

For Georgia, as is evident from the results of the increase in funding for higher education, this model of financing is not enough for the forming the effective mechanism of improving the quality of higher education, which requires the changes.

The situation with the financing by householding leads to the emergence a gap between the real sector of economy and one of the tasks of universities - training the graduates to meet the needs of the labour market. Because the consumers of educational services, the applicants, the learning of which is paid by householding, mainly they are motivated in choice of specialty by their desire to get a particular specialty and not its demand of labour market. So, hypothetically, a graduate who has chosen the profession on the basis

of unreasonable desire of the needs of labor market is becoming a potential unemployed. As a result, this leads not only to the increasing in youth unemployment but also demotivation of population to obtain higher education because of mis-information and mis-understanding of the situation, which is appeared. After all, the main reason is, primarily, the fact that householding in financing, does not take account the current situation at the labour market as a result, their choice hasn't any relation with the real economy and the long-term prospects of further development. Until this tendency exists in Ukraine and Georgia, the gap will be increased every year and the value of higher education will be decreased.

In Ukraine and Georgia, to keep universities at a high level, there is no alternative but to charge tuition fees for national students. In this situation, policy-makers (government) must choose the most suitable model of higher education financing to provide better results.

Depending on the combination of public and students' private funds, there are two alternative models of higher education financing: the model of binary financing (MBF) and the model of diversification financing (MDF) [8].

In the MDF all students are liable to pay tuition fees. The financial accessibility of higher education is provided by means of public scholarships and student loans. This model is traditional in American and Western European countries. That is why the problems of sharing finance in higher education are usually considered with regards to the MDF [1; 5; 12].

In the MBF, the students passed university entrance examinations with better results are eligible for free tuitions and academic scholarships, whereas all others receive none of public grants and must pay tuition fees. This model is used in the post-Soviet states. In other words, the expenses on higher education of every student are financed separately in the MBF (either from public or private funds) and simultaneously in the MDF (from both public and private funds).

Next, we consider it is necessary to observe the advantages and disadvantages of both models (table 2).

**Table 2**

**The comparative characteristic of advantages and disadvantages of  
MDF and MBF models**

<b>MDF</b>		<b>MBF</b>	
<b>advantage</b>	<b>disadvantage</b>	<b>advantage</b>	<b>disadvantage</b>
possibility to obtain large expenditure per student and thus to improve the quality of higher education.	the necessity to organize the effective student financial support system to help disadvantaged students, if such support system is failed for some reason, higher education becomes inaccessible to low-income students.	free access to higher education for advanced school-leavers regardless of their income. There is no need for large student loan programs.	excessively sensitive to the amount of budget expenses on higher education, thus it becomes very ineffective when public budget is tight.

**Source: formed by author based on [1; 5; 8; 12]**

We can admit that such disadvantage of the MBF has happened both in Ukraine and Georgia. In spite of a share of public expenditure on higher education in GDP (the share is as in European countries), expenditure per one student remains very low (the share is less in European countries). So, one of the ways to make solutions is in transferring from the MBF model to the MDF. The key characteristics of MDF model:

- 1) higher education is funded via a combination of tuition fees paid by students and budget grants to institution;
- 2) students from low-income families receive social scholarships;
- 3) excellent-students are eligible for free tuition;
- 4) students are eligible for subsidizing loans, the amount of which depends on their income and tuition fees;
- 5) public resources are redistributed from direct financing and academic scholarships to social scholarships and student loans.

The process of implementation such model will be more efficiency for the system of higher education and economy in the whole by the activation of the participation of the universities in various grant programs, their scientific activities, which will be aimed on the creation of scientific laboratories, which will not only raise the level of research, but also the quality of education in the whole. Moreover, the universities need to increase the number of paid services, including the reorientation of universities into a more significant participant among the others in the innovative ecosystem.

Thus, we conclude that the mechanism of implementation of effective funding models is very important for the countries of transition economy, including Ukraine and Georgia, because the deepening of cooperation between universities, government and business in a global environment which is open, and jeopardizes such countries and its system of higher education, which are apart of modern approaches to management, including the financial management of system of higher education. Therefore, the study of experience of implementing the funding models of foreign countries should be based on the added value as for the economy so for the society in the whole.

### REFERENCES:

- Altbach and Johnstone**, 1993 P.G. Altbach, D.B. Johnstone The Funding of Higher Education International Perspectives Garland Pub, New York (1993).
- Education at a Glance 2014: OECD Indicators. [Electronic Resources] - Access: [http://www.keepeek.com/Digital-AssetManagement/oecd/education/education-at-a-glance-2014\\_eag-2014-en#](http://www.keepeek.com/Digital-AssetManagement/oecd/education/education-at-a-glance-2014_eag-2014-en#).
- Education at a Glance 2016: OECD Indicators. [Electronic Resources] - Access: [http://download.ei-ie.org/Docs/WebDepot/EaG2016\\_EN.pdf](http://download.ei-ie.org/Docs/WebDepot/EaG2016_EN.pdf).
- European Commission/EACEA/Eurydice, 2015. The European Higher Education Area in 2015: Bologna Process Implementation Report. Luxembourg: Publications Office of the European Union.

- Johnstone and Marcucci**, 2010 D.B. Johnstone, P.N. Marcucci Financing Higher Education Worldwide Who Pays? Who Should Pay? Johns Hopkins Univ. Press, Baltimore, Md (2010).
- Levchenko, O.M., Levchenko, A.O., Horpynchenko, O.V., & Tsarenko, I.O.** (2017). The impact of higher education on national economic and social development: comparative analysis. *Journal of Applied Economic Sciences*, XII, 3(49), 850 – 862
- Levchenko, O.** Higher education as a factor of human capital development / O. Levchenko, I. Tsarenko // International Scientific-Practical Conference Modern Transformation of Economics and Management in the Era of Globalization : Conference Proceedings, January 29, 2016. - Klaipeda, 2016. - P. 175-179. [Electronic Resources] - Access: <http://dSPACE.kntu.kr.ua/jspui/handle/123456789/3595>.
- Olga Erforta, Irina Erfortb, Larisa Zbarazskayac**, Financing higher education in Ukraine: The binary model versus the diversification model. *International Journal of Educational Development*. Volume 49, July 2016, Pages 330–335. [Electronic Resources] - Access: <https://doi.org/10.1016/j.ijedudev.2016.03.009>.
- Organisation for Economic Cooperation and Development. Gross domestic product (GDP). [Electronic Resources] - Access: <https://data.oecd.org/gdp/gross-domestic-product-gdp.htm>.
- Organisation for Economic Cooperation and Development. Population. [Electronic Resources] - Access: <https://data.oecd.org/pop/population.htm>.
- Rangaa M.** Triple Helix Systems: An Analytical Framework for Innovation Policy and Practice in the Knowledge Society / Marina Rangaa and Henry Etzkowitz // *Industry and Higher Education*. Vol 27, Issue 4, 2013. [Electronic Resources] - Access: [https://triplehelix.stanford.edu/images/Triple\\_Helix\\_Systems.pdf](https://triplehelix.stanford.edu/images/Triple_Helix_Systems.pdf).
- Teixeira et al.**, 2006 P.N. Teixeira, D.B. Johnstone, M. Rosa, H. Vossensteyn Cost-sharing And Accessibility In Higher Education: A Fairer Deal?, *Hi Gher Education Dynamics* v. 14 Springer, Dordrecht (2006).
- Tsarenko, I.** The position of higher education in Ukraine in the comparison of the international trends in higher education / I. Tsarenko // *Інноваційний розвиток і транскордонна безпека: економічні, екологічні та гуманітарні аспекти* : IV

**CHAPTER 3. INNOVATIVE DEVELOPMENT IN THE XXI CENTURY:  
FACTORS AND RESOURCES**

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: зб. матеріалів конф. - Чернігів, 2015. - С. 370-373. [Electronic Resources] -  
Access: <http://dspace.kntu.kr.ua/jspui/handle/123456789/3622>.

UNESCO Institute of Statistics. [Electronic Resources] - Access: <http://uis.unesco.org>.

U21 Ranking of National Higher Education Systems source. [Electronic Resources] -  
Access: <http://www.universitas21.com/article/projects/details/152/u21-ranking-of-national-higher-education-systems>

**Williams, R., de Rassenfosse, G., Jensen, P. and Marginson, S.** ‘The Determinants of Quality National Higher Education Systems’, *Journal of Higher Education Policy and Management*, 35(6), 2013, pp. 599–611.

Державна служба статистики України. [Електронний ресурс] - Режим доступу:  
<http://www.ukrstat.gov.ua>.

## CHAPTER 4.

### SEVERAL ACTUAL GLOBAL-INNOVATION ISSUES FOR THE REALIZATION OF DEVELOPMENT OF PARTNERSHIP BETWEEN GEORGIA AND UKRAINE

The aggressive development agenda of partnership relations between Georgia and Ukraine is due to the historical necessity of the Euro-Atlantic space in their common-state interests.

There are many issues that require attention and we can not ignore global innovative tendencies. Therefore, we consider it appropriate to refer to some of the topical issues, such as:

- Technogeneous Threat: Forecasts and Reality;
- Technological Development: News and Threats;
- Theoretical-conceptual dimension of compatibility of global and national economies;
- Regional economic cooperation and competition.

#### 4.1. Technogeneous Threat: Forecasts and reality

Technical progress makes our life more comfortable, but technological disasters cost colossal amounts of money to corporations and states, sacrificing a lot of lives. The biggest disasters are Chernobyl accident (200 billion dollars); Shuttle “Columbia” explosion (13 billion); Tanker “prestige” sink (12 billion); Explosion of “Chelinger” (11 billion); Oil-platform “Peyer-Alfa” fires (3,4 billion); Oil extraction (2.5 billion) of tanker “Exon Waldes” and so on.

Modern nuclear technologies that have broken the name of the US “Trim-mile Island” and Chernobyl, have now suffered one more grandiose defeat in Japan. Americans and Russians have long realized that Uranium-235 and

Pluto-based nuclear energy are unimaginable. However, the prospects of this sector will depend on nuclear fuel supplies.

The part of the scientists thinks that the key word in this case must be said by superpower superpowers. In particular, China focuses on the nuclear power of the supernatural development, and by 2020 it is going to increase the capacity of the AES (atomic power stations) by 7 times. At this moment, there are 30 new nuclear reactors, and not with Russian participation, because Russian technologies are considered to take place. They plan to increase their nuclear capabilities in Iran, India, Indonesia and South Korea 5-10 times. The US, as the world leader in energy production and consumption, has solved its problems for a long time at the expense of oil. As for Russia, there is no alternative to the development of nuclear energy.

Techniques and technologies are developed and widely applied to the level of a certain level. People feel it and make predictable predictions in waiting for bad ones. For instance, a long time has passed since these words were published:

“At a certain stage in the development of civilization, when humanity is on the verge of cardinal changes, the weakest and unhealthy formations face an apparent threat of extinction. These nations, their languages and states are also concerned. There are no more Urartus, Hettars, Aztecs, Olmeks, Klemen and one other great civilization. Developed at the time and the highest levels of the elderly have not been able to develop a self-preservation program and virtually succeeded themselves in the death penalty.

At the beginning of the XXI century, world civilization still stands on the edge of a great transition and global change. It is evident that in the world the disappearance of life-threatening and diseased organisms will still occur. For now, there is a lot of danger and risk: military-political, financial-economic, socio-demographic, ecological and other, among which one of the most dangerous and devastating technological threats. “

No one has been told about it yet, but it is impossible to solve the global energy problem in our time without the use of nuclear energy. That's what led to the fact that at least 15 years ago, about 450 nuclear power plants were operating in 32 countries, producing 6% of the total electricity generated (350 g); During the construction period, 42 were in the countries where there was no AES (Argentina, Brazil, India, Iran).

Some believe that half a century of nuclear energy development has shown its high economic-ecological indicators, reliability and efficiency.

But AES is a difficult technical system and the risk of accidents is always accompanied here. These are the lessons that we have mentioned in the disasters as well as in the 1984 mine in the Indian Chemical Factory that killed 3,000 people and even half a million Indians were hurt. That's why there is no guarantee of absolute safety even if a new generation of increased safety reactors (US, Russian Federation, France, Japan).

One of the weak sides of the ACE is the threat of development of accidents (earthquakes, tsunamis, diversions, meteorites collision, etc.) by natural or man-made nature. For instance, studies conducted by the Livermore Laboratory at the US Shurqah ACE found that the frequency of injuries caused by earthquakes for a year could be quite high.

Reduced disaster risk reductions in the world are unimaginable without international cooperation, which is expanding and deepening day by day. For example, in Japan in 2005, a conference on the topic of the 2005-2015 action programs have been adopted: establishment of sustainability and sustainability in countries and communities. At the conference, it was noted that the risk of disaster is becoming increasingly global, and their impact on the world can be a great threat to the world's population, economy and sustainable development. The number of disasters that have been caused by recent disasters has been estimated to be about 200 million people annually, and threats to the environmental degradation and technogenic risks caused by artificial factors along with the threat of natural (geological, hydrometeorological and biological) origin have been highlighted.

International Arena recognizes the need to integrate efforts to reduce disaster risk in politics, sustainable development plans and programs that should be based on bilateral, regional and international cooperation. This resulted in the “Yokohama Strategy” (1994), the Red Cross and Red Crescent 2003 International Conference, the Mauritius Workshop 2005 Workshop on the Challenges of Small States, the Johannesburg 2002 World Summit Risks and Their Prevention About, UN 2000 Millennium Declaration, Tampere (Skull Found in southern Finland) Provision of Telecommunication Resources for Disaster Reduction on and so on.

Prior to the Global Technogenic Crisis of March 11, 2011, many countries - USA, China, India and Great Britain have worked on grandiose plans for construction of AES to build 200 reactors. Lithuania, Poland, Turkey, Bulgaria, Finland were planning to build new stations. The Japanese catastrophe all thought about the expected results. It is also worth mentioning that Russia is building the most important part of the AES across the globe.

Now everywhere and in Russia itself activists of nuclear energy are activated, but “Rosatom” does not intend to refuse its plans, as each energy price is about 2 billion, which is a great source of income for him.

As it is known, Russia plans to build AES in the Bolorus and Turkey. We have neither Belarus nor Turkey. In view of this, it is noteworthy that the first deputy director of the Institute of Natural Monopolies of the Russian Federation Nigmatlun’s open letter to the Director General of “Rosatom”, where a number of negative sides and threats in the nuclear field are listed. Among them are: construction setting, unprecedented corruption, low level of security during operation, regressive scientific-technical policy, lack of independent and qualified expertise and failed personnel policy.

The EU urged Russia to conduct the stress-testing of the AES, and even intends to close the reactors that did not have such a test; Italy has decided to suspend its nuclear program; The Netherlands has the only AES and is going to close. As for Armenia, he said he would act on Fukushima’s experience. Mentioned are really reasonable and reliable statements and actions.

About 30 years ago, a well-known German researcher and historian of the reactor technology, Joachim Radcau, said: “It is a safe reaction to the sky flying in the sky that has been invented in the years of crisis and has not yet been realized. Later in the 10 countries with the Atomic Energy Agency (EEA) and the ASEs, it was argued that by 2030 the reactors of the fourth generation would be created, the blocks of which would be much smaller, more economical and more acceptable for humanity. However, those who did such a prognosis did not or could not make a prediction that would take place on March 11, 2011 in Japan.

The devastating effects of the earthquakes in Japan are unimaginable. As they say, it is still impossible to evaluate the tragedy and the whole damage. Nevertheless, we can still imagine if potentially disastrous in the rest of the country. We can look at these two sides:

On the one hand, it can be said that Japan has had little impact on the world economy over its slow economic growth over the last 25 years. The lowest risk is probably the two biggest economies in the world. Japan provided only 5 US exports and 8% of Chinese exports. Even if its economy is completely disintegrating, the direct consequences for these two economies will be negligible - just a few tenth annually.

E. Year Japan was the strongest Australian in the G-10 group, which was almost fifth of its goods, where euro zone is the opposite side of this spectrum in less than 2%.

Among the developing economies Japan was the most dependent of Philippines and Indonesia (16% of exports). East Asia is the third largest country in South Korea, on the contrary, the least (only 6%).

But, on the other hand, if we look at a broader view, we should not abstain from this assessment of one of the most critical moments: “Japanese shock” has not occurred during the sustainable phase of economic development (which is not only Japan). Moreover, oil prices and debt problems (in Europe) are very worrying.

Combination and context of these two factors are confusing if we do not take into consideration the following: The world economy is still fragile, despite the euphoria of developing world stock markets. We must not forget that the financial crisis is not as solid as the starting point. Because of this, the after-after economies are very sensitive to fluctuations and are more prone to reciprocity than it could have been in the opposite cases.

There is an additional difficulty that makes the current earthquake even worse: governments and central banks have exhausted traditional resources that they had long hoped for during economic struggles. This applies to both cash-and-credit and tax-budget policies, and two pillars of modern anti-cyclical stabilization.

In this regard, one of the biggest puzzles: because the world shocks after the crisis gets shocked, central banks are not left to cut interest rates, the expansion of the monetary expansion will lead to disastrous consequences. It is possible to accelerate the expected inflation. Obviously, the opposite factor is to be taken into consideration - Japan has managed to hold Kobe after the 1995 earthquake, and hopefully, it will be able to do it just as soon as it will be less than its economic growth in the first 10 years: The expansion of new construction will only be temporary relief for the country's economy.

This is one of the lessons that Japan will learn from the rest of the world. Japan's economy had a very close relationship with other serious problems that have influenced the world economy in recent years. Starting from the bubble of assets and functioning from the financial system and the failure of the monetary credit policy, this country was seen as a laboratory for our future research in many ways.

Unfortunately, the world did not learn anything from what happened to Japan, but now there is something else that can not be overlooked: the current disaster is not limited to the relatively small impact that Japan has on the global economy. It is more important to see that we are in a narrower corner of the squares.

According to the Japanese Economy Minister, the country's economic loss was relatively insignificant, as the affected areas were only 4,1% of the economy. In spite of this, according to the World Bank experts, the recovery of the damaged economy would cost Japan \$ 235 billion, which would take five years. Japan's central bank has announced a proposal for more than 680 billion US dollars from the disaster of March 11, 2011. However, they did not exclude that the inflation in the future was caused by the country itself, and then another.

It is necessary that not only theoretical analysis and conclusions presented on the proposed problem, but also the ability to take effective and operational decisions from the world leaders and this should be based on the bold scientific ideas offered by the humanity to take on safe technological development.

#### **4.2. Technological Development: News and threats**

At the end of the XX century it became apparent that the industrial society is consistently occupying the principle of the post-industrial society. It changes the human condition, creates the space of creative activity and creates conditions for sustainable development in the interests of the present and future generations, etc. This is the distinguishing feature of the modern stage of development of society that emerges and accelerates the information market, ie the market of knowledge, its processing and use. Today nobody doubts that the whole arsenal of knowledge in the world can be united in a global network and create a completely new, revolutionary, innovative epoch.

The development of the information market is a key factor for intellectualization, which, in turn, puts the "new economy" on the ground. If a person recently acted on nature and changed his face, now, through the use of

computer information technology, the most profitable business takes place on the individual as well as public consciousness. It is deeply welcomed and deep in the sense of the case that the strengthening of modern states is not the concentration of new tech-nines on one of Manhattan's one-kilometer, but the development of new technologies on national history and culture.

The absence of a clear long-term strategy for the country's development under these conditions may lead to a national catastrophe. This problem is particularly acute both in Ukraine and in Georgia, which do not strive forward to a new informative society, but back to the original accumulation of capital and a natural disaster of market forces for political shredding.

It is known that long-term strategy for development can be irregular or innovative.

The inert strategy is based on the ideology of neoliberalism and market fundamentalism. It preaches the market's alliance and the passive role of the state when it refuses its strategic-innovative function to open the door of the economy for TNCs, which use individual countries as sources of raw resources and markets for their own products. The result of such a strategy is the transfer of a country of the world scientific-technological and economic progress, loss of competitiveness of its economy and their dependence on the avant-garde countries and the TNTs, exhausting their farms with different experiments and ultimately increasing the risk of losing independence.

Therefore, the only correct and saving uzrunvelmqopia innovative strategy, which need to be nourished by the business, and the name of the entire community-ripe concentrate principally new, competitive products and technologies, the aging of industrial machinery renewal and, in general, the formation of an innovative economy The country of innovative processes.

Currently, radical innovations emerge in the functioning of the state itself, where it takes its strategic and innovative function in the first place, the interests of the balance of interest and ecological balance between generations.

The outcome of the innovative strategy can be several times the increase in labor productivity based on postindustrial technologies, the absolute reduction of primary (natural) resources and the harmful impact on nature.

The scientific-technological revolution and the globalization process have changed the economic development mechanism and demonstrated that the decisive role in economic growth is to promote non-material production and expand investment in human capital.

Accelerated development has been achieved by countries where the most important element of the time strategy was to use capital growth in the use of technological knowledge (East Asian countries).

Thus, in our time it became necessary to strengthen neo-institutionalism and make amendments to the strategy of international organizations. The main importance here is to assert the fact that development is the main goal of development and, at the same time, the main factor of human development.

The XX century clearly confirmed how difficult a phenomenon is. At different times and different places it was closely intertwined with the success or failure of the market economy, activation or weakening of the role of the state, liberalization and widespread implementation or privatization. That's why traditional strategy, simple and fragmented decisions can not solve the problem. It is necessary to optimize the efforts of the state, private sector, civil society and international organizations and to comply with their interests to successfully solve the difficult problems of development.

Countries use different ways to formulate the post-industrial science economy.

There is an opinion that the avant-garde countries are using such provisions and principles that are hiding in economic science and are "shadowed". One of them is a balanced development principle that involves regulation of economy and self-regulation. The mechanism of functioning of socio-economic systems is understood as a two-seater structure of manage-

ment, where the object and subject of the management is connected to each other at the same time through direct connection and a two-line feedback. One of these two contours is one of the responses to changes in the system, investments and development, and second - its stability, integrity and succession.

Secondly, the principle of unequal exchange - implies the enrichment of one country by economically weakening others who are now competitors or will be in the future.

The use of both these principles confirms the history of economic development of the Netherlands, China, Japan and the United States, which today have very solid ratings of innovative development. For example, the Netherlands used non-exchange exchanges not only for the weak Asian and African countries but also to England itself. It is noteworthy that even in the highly developed Netherlands, they still refuse traditional agricultural activities and sectors (making diamonds, cheese production or flowering).

China has used total liberalism in the post-Soviet foreign trade policy for economic growth. Many people think that, for example, imports of Chinese goods in the Russian Federation, Kazakhstan and other countries are damaging, and vice versa - the growing exports of raw materials from China. This is when China itself has taken a very hard time even from raw materials. Today, the finished products of China are becoming more and more marketable, and with the earnings obtained, it develops innovative technologies.

The most effective way is to select the US and Japan, which are far ahead of China and the Netherlands with innovative development. This is the way to import the intellectual potential. Japan was the first country to buy intellectual property - patents, licenses and know-how in Europe and the United States, or the use of a new method of unequal exchange. Such exchange has been brought to a new level in the United States, which has acquired intellectual resources, ready-made capital, or specialists and professional people all over the world.

Analysis shows that these countries are doing the same with the development of innovative development and development of the entire national economy.

Achievements in education, science and innovation are not always great, because the effect is only when the “goods of the future” are based on the development of “today’s goods”. It can happen as long as the computer is only used as a printing machine.

We can conclude that the criterion for sustainable development of the national economy is not the growth rate of economic growth, but the quality of balanced development of its branches.

Innovative development is not the result of growth in the high tech sector, but the result of achieving the sectoral balance of the economy.

We have indicated earlier that due to the uniformity of the components of geoengineering space, it is necessary to revise the ways of achieving sustainable development. The point is that, in the opinion of some authors, the so-called “sustainable development” of the time that is widely recognized makes it impractical to its biased nature, namely the apologetics of the technoogenic form of postindustrialism that is dangerous for the whole world.

To establish and promote the “sustainable development” apologetical nature, they are trying to conceptually define the development of technological principles of public development, and for this purpose they use pure technical ideas that are carried on humanitarian grounds.

The leading idea of “sustainable development” was to maintain the post-industrial model, its institutions and global financial flows. That is why in our time it is inevitable to understand the concept of “sustainable development” as it takes a completely different meaning. Today we must understand the sustainability of harmoniously merging the ethnonational and industrial moments as well as sustainability of the formation of the ethno-economic system.

It is noteworthy that when a new innovative paradigm emerges and new innovative products are started, new industries are also born. Besides, it is

of great importance that the flow of innovations in the already existing sectors of the economy, increase the value added to them and increase labor productivity.

From the new sectors, technologies are transmitted in the old traditional areas of “merging technologies” and the evolution of innovative paradigms.

So there are two directions of development of basic technologies: the first is the emergence of new industries that produce innovative products, and the second is to get into the existing traditional sphere, which increases the productivity of labor and produces new products through the merger of technologies.

Innovations help to boost economic growth, if they are universal and in many spheres of time. Universal innovations are examples of computers and electronics (microprocessors). Technological merger of steel and cement production or computer systems in the chemical industry have developed these industries. Similarly, the combination of electronics and metal stripes resulted in improper and high-quality digital software management.

Innovations are developed in developed countries and this is the first condition for the development of the same countries on the higher level of development. However, the same innovations are used by individual developing countries to increase their technological level and launch new products in developed and developing countries. In this case, developing and developing countries will compete with the cost reduction and improvement of quality. Such is the situation related to innovative paradigm in terms of international scientific-technical progress.

Together with innovation, the relationship between innovator creator and their consumer countries is changing. This is because countries that bring innovations - such as China today - have less expenditure on work. At the beginning of the 20th century, Japan and the innovative-technological rise (1950-1975) had much less cost of production than Japan and that’s why they have won a competitive advantage.

In the second half of the 19th century, and in the beginning of the 20th century, the United States developed the economy through technologies from Europe, and then achieved the prevailing situation in the world economy thanks to the technological advantage and production potential.

Japan followed the US path following World War II and provided rapid development on the basis of Western technologies. The success of the advanced western countries has achieved successful use of microbial innovations such as steel, automobiles, petrochemicals, textiles, electrical equipment and microelectronics. Thanks to the synergistic effect of interaction with numerous innovations, the economies and well-being of the developed countries grew more and more. In the last 100 years, the US GDP has grown 30 times, and Japan is 80 times. It is noteworthy that in the 1950s and 1960s, Japan managed to overcome the 100-year lag of the US on the basis of innovative technological breakthrough.

The same way has led South Korea in the years 1970-2000, and its annual average annual growth rate was over 10%. About 50% of Japan's economic growth rates were in the 1950s and 1970s. This indicates that the real innovative technological breakthrough in the developing economies is only possible in terms of growth rates expressed by double digit numbers. However, when speaking about the positive impact of such a breakthrough we should not forget that the development of information technology is not only revolutionary news but also new threats. In particular, the global information system can become a human-fitting weapon. In addition, new technologies radically change the main resources for development of regions.

Previously the main resource of development was the production of a given territory, which is now replaced by mobile finance and intellect. They do not need to develop a region, but vice versa - to deteriorate the situation in these regions and move the resources to others. It turns out that developed countries are no longer interested in the technological and economic progress of other countries, which is a dangerous trend of our time.

Thus, in terms of the globalization of knowledge and technology, the creation of national innovation systems is very important for innovative processes based on national roots and traditions, based on political and cultural peculiarities.

### **4.3. Global and national economies: Theoretical-conceptual compatibility dimension**

The history of scientific research of globalization problems is a few decades old. Conventionally we can divide it into four stages:

- I. Positive - When continuing the tradition of modernization theories and the evolution of tradition, the emphasis was made only on the positive aspects of globalization;
- II. Critical when critically evaluating the vulnerability of the chances of weak national economies and the preservation of cultural identity in the new world;
- III. Problem - when the main focus was on the new and growing problems of the global world;
- IV. When the crisis lies in preoccupation with globalization, local interests properly underestimate practically conditioned current being, a third of the world economic and political crisis, which is different from the previous two, mainly from the peculiarities of the development of civilization in this stage of mankind has excess capacity and the necessary production, distribution, exchange and consumption of process control and management system transformation in such a way, when the focus will be on the income distribution of the efficient and optimal model, which respond to human vital condition.

Analyzing the problem of globalization and searching their ways of solving a lot of embarrassment, monograph and other scientific work. The

problem of the problem speaks even if the words themselves; “Globalization”, “Global Problem”, “Global”, etc. It has become more widespread in the shortest time and is used in almost all fields of science.

The problem of interrelation and interoperability of the globalization process and the interests of national economies is one of the most difficult. In his research, we think that it is especially important to identify goals such as determining the peculiarities and regulations of globalization, its driving forces and resistance (political, economic, social, organizational-management, etc.), the need for the world crisis and the necessity of transformation Under conditions Of international economic system, the national economies of the place and conditions of development, socio-economic and political problems in the study.

Hence, we believe that the following specific tasks should be defined:

- I. The fundamentally presented trends of economic globalization; Presentation of transnational corporations, real content and nature of the main actors of the economic unity and resistance of the world; Objective assessment of the range and effect of the influence of the global technological space on the development of the national economy.
- II. Determining the scope of the national boundaries of economic development; Assessment of the regularities of economic integration processes and its determinants; Investigation of political influence on economic globalization and the protection of state sovereignty;
- III. Correlation between the two poles of the globalization process - the correlation of corporate and the cohesion-unity of local interests; Globalization Leadership, the study of economic strategies of new industrial, transformational and developing countries and assessing socio-economic results received in Arlider countries;
- IV. Determine the main directions of integration of national economies in the world economy and characteristic of leading factors; Evalu-

ate the role of international economic and financial institutions in this process;

- V. Evidence of the inefficient approach to the development of national economies and the expediency of the use of the rapid breakthrough strategy; Study the internal and external economic factors determining the socio-economic balance, safe and sustainable development of the state and forming its political-economic and organizational-methodological principles.

Purpose of the survey and to achieve the objectives of the research complex will be the subject of national economic development and the potential negative impact of globalization and positive, while the object of even the modern global economic system as a whole and its controversial different capacities and developing, Tarebis peculiarities of national economies, the development of theoretical and practical aspects.

The theory and methodology of researching the development of national economies in the global space should be based on various theories of economic relations, international trade and direct investment, as well as the study of phenomenon of TNTs. “Dependency theory” given to the views and concepts that are related to issues such as: international cooperation relationship of participants, the process of globalization in the modern role of the Transnational Corporation, a division of the international content and function of the economic transformation, the weak state of the countries ‘under’ Eobis maintenance, economic development models for the evolution of the socio-economic equilibrium, safe and sustainable development, etc.

In the theoretical processing of the problems, it is obvious to be used methods such as: historical development analysis, absolute and relatively superiority, abstraction, induction and deduction, selective examination, logical reasoning, data comparison, dialectical-system analysis, compilation of results, etc. Sh.

As a result of this it can clearly demonstrate the peculiarities of the national economies and the determination and integration of their segment in the world economy, to reflect the equilibrium and sustainable development software measures.

It is possible to address the problems of development of national economies in the global space on the basis of such a complex approach:

A) Create an objective presentation on the essence of globalization, its nature and nature.

- Assess the main external (population, natural environment and the material basis for community development) and the internal factors (the new content of labor divisions), the details of their action and the results of the specific countries in question;

In world economic system based on the analysis of organizational integrity, economic regionalization in the context of this system to explain the individual components (the Big Seven and other developed countries, the CIS, China, India and Pakistan, a relatively stable developing countries' net importer of energy, a small population, developing classic Tarebadi 'countries of Asia and Latin America, the least developed, land-locked seas backward countries) on relations between the motives and contradictory nature;

- The two types of TNs have been identified in terms of economic progress: on the one hand they are undoubtedly contributing to the growth and development of the world economy and, on the other hand, to promote an ideology that violates national security.
- Global technological space, as the material basis for modern economic development, is to justify the expediency of the creation of a global technological fund for financing the technological level of the backward countries.

B) Critically describe the mechanism of modern social divisions of labor, which resulted in the national farming of transnational corporations as "divided" as different complexes; Reveal the reasons and consequences of the

change of configuration of economic boundaries; The necessity of participating in national economies in the international division of high-tech labor will be justified by considering their potential.

- Considering the effectiveness of regional economic integration and its accompanying unwanted consequences, we should create opportunities for national economy participation in different regional unions;
- Based on the analysis of the formalities of the state's role in the global economy, the perspective model of the pyramid of political relations in the national state shall be established.

C) Critically evaluate corporate entrepreneurship as an adventurist, unjustified, crisis-revolutionistic way of developing international economic relations and to develop the path of evolutionary, dynamic development based on the principles of compatibility of goals and interests at local, regional and global levels.

- Under the comparative analysis of various local economic strategies, we can see negative events (disproportions in economic structures, neglect of labor and environmental protection, democracy and human rights abuses etc.) in Arlider countries, and thus explain poverty in the Third World War vicious machine
- Assess the standard programs of the International Monetary Fund, World Bank and other similar institutions, which are aimed at maintaining the current economic status quo, and more specifically to protect the balanced balance between producers and consumers.

D) characterize the level of participation of national economies in the world integration processes, with the main indicators of their foreign-economic relations (primarily foreign trade) and foreign investments and make relevant conclusions on the activity of the participation of a particular country in the world economic processes; Determine from different forms of investing, if you have the advantage over the prospect of leaving the world market.

- To reflect the perspectives of economic and political development of the country; absolute or relative advantages; to identify competitive directions and to see its role in achieving socio-economic balance, ensuring safe and sustainable development at this stage of globalization. This makes it possible to carry out specific concrete projects both in national and bilateral partnerships, regional and global levels.
- Based on the complex analysis of existing experiences, we have a clear idea of the role of international economic and financial organizations in the process of reforming the national economy, which is specifically expressed in the effectiveness of changes, macro-economic stability and economic dynamism, investment climate improvement, etc. Thus hurrying the transformation of the national economy and integrating it into the world economy.

E) explanation of what is related to the socio-economic balance in order to achieve an extraordinary breakthrough approaches and fast to use such a strategy, however, to be considered the socio-economic balance of the relationship between social and economic terms-urtiertreaktsiis, civilizational relations and their achievements Ex Withstand context.

- Objectively evaluate the possibilities of national economies with the willingness to enter into the EU, how well they are ready to answer the relevant, so-called “Copenhagen criterion”, socio-economic requirements;
- To formulate the principles of economic development strategy of the country, this will be achieved in accordance with the interests of the national economy and the global processes.

Finally, the problem of such a scale and format is undoubtedly interesting as the theoretical and applied point of view. There will be answers to many questions related to the prospect of national economy and national-state development in terms of globalization.

#### **4.4. Regional economic cooperation and competition**

Today's world economy has a decisive influence on the existing cooperation between the leaders and their rivalries. The US, EU, Japan, China and Russia, on the one hand, are developing themselves and economic growth, and, on the other hand, strongly compete with each other in the hands of energy resources, expand their influence and establish the leader's position in the world economy. The better future of the world will depend on how much they will give priority to stability and sustainable economic growth in comparison to the fight for leadership and how to protect their economic interests without damaging others in their regions where their interests are interconnected.

We can name several such regions: the Persian Gulf oil rich region, the Asia-Pacific region, Central or East Asia.

Central Asia, for example, is one of the sources of natural resources. This fact expands the interest of the leading countries towards this region, making it more difficult and harder for them, strengthens future cooperation and rivalry.

Today, Central Asia is one of the most important geo-economic regions. Its oil and gas, uranium, gold, color and rare metal supplies, communication perspectives are strongly attracted by leading countries and their alliances. Transport projects connecting Europe and Asia further increase its importance as the connecting bridge. Therefore, the interests of China, the US, the EU, NATO, India, Japan and Turkey are presented here. It's more about Russia.

Central Asian raw materials are a good way to implement the Russian energy strategy and disrupt Nabucco's project to expand economic relations with China, India and Japan.

China and Russia also view US as a more competitor in Central Asia than a partner.

The US, in turn, seeks to end the Russian monopoly on the energy transport network in the region. China is trying to do its own forces. Since 2008

her new line is that she wants to have a satisfactory trade-economic relationship with Russia as political and, on the contrary, enhanced political relations with the US on the basis of enhanced economic interdependence. This, on the one hand, is a way to equate relations with all directions of the Russian-China-US triangle, and on the other hand, it is a risk that Russia does not consider it an attempt to politically break away from the United States.

The US is actively cooperating with the Asia-Pacific region. The best conditions in this region are due to cheap labor and low price for investment. The business is well acquainted with innovations and financial centers are well developed. The US trade index is 2 times higher than that of Europe. China's growing factor, which is harassing India, casts India-US cooperation in the region and India's willingness to hire trade-economic relations with Russia at the level of the Soviet period. The main partners of the US are China and Japan.

On the one hand, intermediate economic relations between leaders and regions, and on the other hand, have many aspects and peculiarities and have different forces and interests. Deep study of all of them is of great importance to predict the future.

Below, economic interests of the US (Traditional Leadership), China (undisputed promising leader) and Russian (stubborn state of livelihood), including rivalry and prospects for the development of integration cooperation will be briefly considered economically the most dynamic and politically non-aligned Asia-Pacific In the ocean region as well as in the central A. East Asia.

It should be noted that globalization and regionalization are complemented in some parts, and in some cases they are against each other. The results of the interaction of these two tendencies are often discussed by the dynamics of foreign trade turnover inside the regional group. For instance, in the East Asia region, 55% of total turnover reached (45 in Nafta and 60% in the EU).

1997-1998 In spite of the crisis, which hindered the development of trade in Asia, it became noticeable to the relative weakening of the importance of developed markets in the region's main exporter countries, except China. At

the same time, China became active in the role of the key market, especially for the first industrial wave of the first wave. The main part of their export in China is the nodes and components intended for further processing and assembling and other countries (including those in developed countries).

So we can briefly summarize:

- China today is actually “monopolizing” the flow of goods in developed countries, primarily US markets, which details the details of East Asian countries, components and investments, investment in the manufacturing sector, and partly from Russia’s energy and energy resources And finished products After the US, Japan and Russia sends;
- The US sells enormous amounts of money in the Chinese economy and acquires more and more ready-made products;
- Russia is actually a source of both raw materials and fuels for both of them and produces ready-made industrial and agricultural products, as well as mainly US investments in the energy and energy sectors.
- It is easy to notice that China’s economy is based on the key role in the region that receives investments from the US and raw materials from Russia. The US economy is deeply integrated into the region, but largely through China. As for the Russian economy, it is not involved in economic cooperation in the region (if we do not consider military products). Such relations with Russia, China and the United States are entirely acceptable for China, partly to the US and the unacceptable Russia.

To analyze economic integration in East Asia, let’s discuss China’s position towards the key issue of the Asia-Pacific Economic Cooperation Forum.

China is confident about the status of the new economic superpower. According to the purchasing power parity, 2008 it was 12% of world production. It has been established as an export center of industries and plays a

major role in funding the current US account. It is not ruled out that in the future China may take the US position and become a new hegemon. In other words, China will still be able to resist the attempts of American domination.

One of China's foreign economic priorities is the expansion of economic links with traditional partners in the developing countries of the region. Its attitude towards economic integration processes in East Asia is generally positive. This process, on the one hand, is relevant to the ongoing economic reforms and goodwill policies in the country. On the other hand, it is trying to keep up with international and regional economic growths forming process and therefore joined the regional economic cooperation forum of the program (1995.), which provides for the liberalization of trade and investment regimes, and economic and technical cooperation, welcomed the region's economic integration after the activation process.

China understands that the countries of the region differ greatly from the level of economic development and they see different priorities of cooperation. Therefore, at this stage, China prefers a mechanism for dialogue, which ensures compromising nature of joint decisions. In his opinion, it is unlikely that East Asia is forming the same strict fixtures of the EU and making mandatory decisions for everyone. In this respect, the Asia-Pacific region is more like China's arms harmonization of economic relations and the structure of multilateral economic cooperation.

China supports the informal status of the forum and consensus on the basis of consensus, thus ensuring that it is insufficient to prevent unnecessary binding decisions for its economy.

Currently, China's diplomacy is a priority direction in the Asia-Pacific region's cooperation with economic and scientific-technical cooperation. It is therefore expected to open up the technology market, strengthen the protection of intellectual property rights, combine market and regulatory mechanisms, implement joint projects, etc.

Asia 1997-1998 The financial crisis has been the issue of deepening financial integration in East Asia. The idea of creation of the Asian Monetary Fund was not implemented because of the negative attitude of the IMF and the West, after which the Group of Companies + agreed to create a network of bilateral agreements on the expanded regional system of exchange rates and exchange swaps (swaps) of their national currencies. This is a reliable way to reduce currency devaluations, the creation of a financial crisis and the sharp devaluation of national currencies.

2006 Asian Development Bank (AGB) has established a reporting unit, which was preceded by a further step of coordinated foreign exchange policy - trilateral agreement with the creation of the North-East Asian Financial Council with the participation of China, Japan and South Korea.

China has also played a role in the financial donor lately, and it gives preferential credits to both Asani and Central Asian countries (within the Shanghai Cooperation Organization).

It is noteworthy that the volume of trade-economic, investment and financial cooperation in North America is unprecedented in comparison with Russia-US and Russia-China analog indicators. The same is true of the contribution made by these three giants in the development of economic cooperation in the Asia-Pacific region.

China follows the line of creation of a free trade zone in the “Ace +3” format, and neither the US nor Russia in this process. Instead, China does not agree with China’s initiative to set up a free trade zone in Central Asia instead of establishing a “natural” space for Eurasian economic cooperation instead of Shanghai Cooperation Organization. If we consider the existing tendencies, this is definitely an unexpected attempt.

We think that the above issues will help us to thoroughly understand the perspective of partnership relations between Georgia and Ukraine and establish a new paradigm.

## CHAPTER 5.

### SOCIAL ASPECTS OF INNOVATIVE DEVELOPMENT OF UKRAINE AND GEORGIA

#### 5.1. Modern trends in the development of education in a global context

The nature and dynamics of economic relations and phenomena are fundamentally changing under impact of important modern processes. Among them the globalization process of the internationalization of economic life, the origin and development of the relationship between the national economies, their convergence and the growing interdependence of different actors of the country, which has become a global and covers the entire area of public life. Strengthening the internationalization and globalization carries a transformative impact on the economic conditions and the forms of organization of educational activities.

Along with the globalization process of determining other contemporary acts increase the role of education in social development and approval of its post-industrial paradigm. Under the influence of two key trends (globalization and post-industrial, information society) education, as a public institution, is also transformed takes on new meaning, content and form of the organization.

The main current trends, in our view, should include the following:

- *Increasing the role of education* in the development of the knowledge economy (both the generator and transmitter of knowledge and information), change the content requirements, methods and forms of education (competence-based approach, the need for a new skill: the ability to learn throughout life, ability to work with large amounts of information, new information and communication technologies (ICT), creativity and ability to work in a team);

- *Diversification of funding sources* (primarily from public funding to a wide range of sources of income of higher education institutions and mainstreaming the problem of increasing the efficiency of spending of the funds) and the *organizational forms* of educational activities (the concentration and centralization of university activities, diversification: parallel education, networking universities, distance education, MOOC);

- *Internationalization and globalization of education* (the need to unify the educational content on an international scale, the recognition of diplomas, the formation of the world market of educational services, the growth of the number of foreign students, the emergence of a transnational, cross-border education, increased competition and the emergence of global rankings of universities).

**The increasing importance of education as a factor of social development (as a generator and transmitter of knowledge and information).** Most successful countries in the world proves that in today's globalized and computerized world of competitive advantages of the country and its subjects are provided not so much a capacity of basic industries, as many factors related with the quality and activity of human resources. Speaking important institution formation of qualified human resources, the education sector is becoming an important bridgehead to ensure international competitiveness of each country and, in addition - she is involved in the process of internationalization.

Challenges of the modern development of education are a manifestation of the need to increase the scale of education, increasing educational life in the labor of the worker, the economy needs change to qualitative characteristics of human resources, and increase the value of intellectual function in the labor process. In the international education statistics are widely used indicator of the expected duration of education, which is calculated on the basis of data on the average years of education of the population. The extrapolation of the values of this index for the younger generation means the number of years

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

that the average young person will spend in the formal education system from primary to tertiary level.

**Table 5.1**  
**The expected duration of education from age 5 through age 39, 2015<sup>1</sup>**

Countries	The expected duration of education (years)	Countries	The expected duration of education (years)
Australia	20,5	France	16,3**
Belgium	20,0***	Austria	16,1
Ireland	19,65	Switzerland	16,1
Iceland	19,63*	Hungary	15,6**
Finland	19,34	Japan	15,4**
Denmark	19,3***	Slovak Republic	15,0**
New Zealand	19,3	Argentina	17,3
Sweden	18,7	Brazil	15,4
United Kingdom	18,0**	Ukraine	15,31**
Greece	17,8	Russian Federation	15,3
Spain	17,8	China	14,01
Norway	17,6		
Germany	17,3	<b>World</b>	<b>12,3</b>
Korea	16,6	<b>Africa</b>	<b>9,67</b>
United States	16,6**	<b>Asia</b>	<b>12,45</b>
Portugal	16,6	<b>Europe</b>	<b>16,48</b>
Poland	16,4**	<b>Northern America</b>	<b>14,87</b>
Estonia	16,4**	<b>Southern America</b>	<b>15,06</b>
Italy	16,4**	<b>Oceania</b>	<b>16,73</b>

\*2013

\*\*2014

\*\*\*2016

According to table 4.1, we can see what is the expected duration of education of the population from 5 through 39 age in different countries. In the duration of the leading countries of the world at all levels of education is far from being the usual term for us in 15 years and the most advanced, in terms of the dynamics of socio-economic development of the country - close to 20 years (Australia – 20,5 years, Finland – 19,34, Ireland – 19,65, Iceland – 19,63, Belgium – 20,0 years etc.). On average, in the world the expected duration of education is 12.3 years, and in the Europe - 16.48 years.

1 Education statistic. – [Electronic resource]. Retrived from: <http://data.uis.unesco.org/Index.aspx?queryid=147>. [in English]

**Table 5.2**

**The number of students in the world and regions, 2000-2014<sup>2</sup>**

	2000		2005		2010		2014		2014/2000
	Thousands	%	thousands	%	thousands	%	thousands	%	%
<b>World</b>	99 739.2	100	139 292.6	100	181 531.1	100	207 516.4	100	208.5
<b>Africa</b>	6 087.8	6.1	8 610.7	6.2	11 452.8	6.3	13 011.0	6.3	213.7
<b>Asia</b>	41 136.5	41.2	62 611.7	45.0	91 201.4	50.2	116 832.6	56.3	284.0
<b>Europe</b>	25 514.3	25.6	32 081.8	23.0	33 688.3	18.6	30 740.9	14.8	120.5
<b>Northern America</b>	17 700.8	17.7	22 881.1	16.4	27 278.9	15.0	26 811.9	12.9	151.5
<b>South America</b>	8 255.4	8.3	11 812.7	8.5	16 335.8	9.0	18 372.3	8.9	222.5
<b>Oceania</b>	1 044.3	1.0	1 294.6	0.9	1 574.0	0.9	1 747.8	0.8	167.4

Growth in demand for higher education appears to indicators such as the increase in student population and the proportion of the population with higher education. According to Table 5.2, you can follow the process of the rapid growth in the number of students in higher education institutions in individual countries and the world at large. For 15 years, from 2000 to 2014, the student body in the world grew by 209%, reaching from 93 to nearly 208 million. The increase in the number of students is observed in all countries, but the most - in the Asian countries (284%), South America (223%) and Africa (214%). The smallest dynamic is observed in countries with developed education industry – in Europe (121%) and Northern America (152%). Accordingly, the market value of regions is changed on the global market of education. In 2000 the European countries consist 25,6% and northern American -17,7%< then in the 2014 – that 2 regions present 27,7% world number students.

The world leader in terms of growth of students is China, which has increased the number of its students is almost 7 times - by 681% from 1999 to 2015, Brazil - by 329%, Mexico - 186%, India - by 322%. The growth of student population in Ukraine took place on the global average under 2008

2 Education at glance 2016. OECD indicators. - [Electronic resource]. Retrieved from: [www.oecd.org/publishing/corrigenda/](http://www.oecd.org/publishing/corrigenda/)[in English]

- 52%, in other post-socialist countries have had approximately the same level (Estonia - 39%, Latvia - 38%, Lithuania - 88%). But after 2008 decreasing of student's number began in Ukraine and other postsocialist countries. Developed countries generally show a slight growth of students, which are explained, first, a stable socio-economic situation, and secondly, the demographic factor - the reduction of the young cohorts of the population. The number of students of higher education in Georgia grew to 2005 (174.3 thousand students), then sharply decreased (2010 - 105.7 thousand), and since 2012 it has been growing - 127.6 thousand in 2015<sup>3</sup>. Escalating student population, these countries offer mainly through increased influx of foreign nationals, talking about what goes on. The increasing of the population' average level of the education is the overall world trend. The number years of general education is increasing.

Another interesting factor - proportion of the population aged 18-25 that is in the education system (table 5.3). Ukraine, like other former Soviet countries show high values of this parameter: in this country learns to 82.3%. Higher rates are in the Spaine (89.1%), Bilorus (88.9%), Finland (88.7%), U.S. (86.7%<sup>0</sup>), Republic of Korea (95.3%) etc.

The increase in demand for higher education is manifested not only in the increase in student population, but also to increase the educational level of the population as a whole. On average in OECD countries 35,5% of the population have higher education. In some countries, the proportion of the population with higher education has the following values: in Canada – 56,3%, USA – 45,7%, Japan - 50%, Korea – 46,9%, Unighted Kingdom - 46%, Australia – 43,7%. Percentage of population with higher education is growing at a lower age, so higher education for 42,9% of young people aged 25-34 years and only 26,2% of the population aged 55-64 years, as can be seen from the Table 5.4:

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3 Education statistic. – Electronic resource. [Available mode]: <http://data.uis.unesco.org/> [in English]

**Table 5.3**

**Spread of higher education<sup>4</sup>**

№	Countries	Gross enrollment ratio, %			
		2014	2010	2000	1990
1	Spain	89.1	78.7	57.8	35.6
2	Belarus	88.9	79.4	54.6	48.8
3	Finland	88.7	94.1	82.4	44.5
4	USA	86.7	94.2	68.1	70.8
5	Chile	86.6	69.7	37.1	-
6	Slovak	82.9	88.3	55.2	22.8
7	Ukraine	82.3	81.9	48.7	48.7
8	Denmark	81.5	73.6	57.2	34.1
9	New Zealand	80.9	82.5	66.2	39.4
10	Austria	80.0	68.7	56.6	32.6
12	Russian	78.7	76.5	55.8	55.0
20	Latvia	67.0	70.4	49.5	33.6
33	United Kingdom	56.5	59.1	58.5	26.5
	Republic of Korea	95.3	99.7	78.4	36.9
	Greece	110.2	102.7	51.5	24.9
	Australia	86.6	80.9	67.0	35.1
	Georgia	34.8	28.9	37.8	-

In this context, quite interesting is the criterion proposed by M. Trounitsa relatively massification of higher education. Thus, in his opinion, if higher education is obtained from 15 to 40% of a certain age group, it can be considered mass [cited by M. Polyakov<sup>5</sup>]. According to Table 4.4, we can see that in the vast majority of countries, this part is already much higher than the limit of 50 per cent and is approaching its upper threshold. This means that in these countries (including Ukraine) higher education has acquired not only massive, but nearly universal. Those countries in which the engulfing of the population aged 18 to 25 years of higher education is low, and just show the highest growth rates of student body (usually the populous countries of South-East Asia and Latin America).

4 Education statistic. – [Electronic resource]. Retrieved from: <https://knoema.com/atlas/topics/Education/Tertiary-Education/Gross-enrolment-ratio>

5 Polyakov M.V., Savchuk V.S. Klassichni universitet: evolutzia, suchasny stan, perspektivi. – Kiev, 2004. [in Ukrainian]

Table 5.4.

**Part of the population with higher education, 2016<sup>6</sup>**

Countries	Age groups		
	25-64 лет	25-34	55-64
Australia	43,7	49,3	35
Canada	56,3	60,6	46,2
Finland	43,6	41,1	37
Japan	50*	60	39,7
Republic of Korea	46,9	70	19,7
Latvia	33,4	42,1	27
New Zealand	36,3	43,4	28,2
Norway	43	48,6	33
Poland	28,7	43,5	13,9
Portugal	23,8	35	13,1
Sweden	41,1	47,2	30,8
Turkey	19,4	30,5	10,2
United Kingdom	46	52	37,6
United States	45,7	47,5	41,9
<b>OECD, средн.</b>	<b>35,5</b>	<b>42,9</b>	<b>26,2</b>
<b>EU – 22</b>	<b>33,2</b>	<b>41</b>	<b>24</b>
Brazil	14,8	16,6	11,5
Russian Federation	55,6	59,8	50,2

\*2015

**Diversification of financial sources.** Increasing the role of education in social development is manifested in the strengthening of the institution of education in general and higher education in particular, that also means an increase in its funding. More widespread education (at tertiary and postgraduate education), the increasing demand for education in terms of training of highly qualified human resources adequate to the knowledge economy, and the need to determine a more powerful financial security. Globally, the trend is manifested in the increase in the volume of financial resources, which are sent to the company in the education system, as well as - in their considerable diversification.

The main priority a source of education funding remains by the state. However, despite the weighty enough attention paid to the governments of

6 Education statistic. – [ Electronic resource]. Retrived from: //stats.oecd.org/Index.aspx?datasetcode=EAG\_NEAC#

advanced countries in this field, there is a certain limit. According to Table 5.5, we can see that the world is gradually decreasing portion of the government funding for education and as a percentage of GDP and as a percentage of total government expenditure. That is why, the general trend of the evolution of the financial mechanism of the education system acts gradual diversification of its sources of funding at all levels.

**Table 5.5**  
**Government expenditure on education in the countries of the world<sup>7</sup>**

Country	Government expenditure on education as a percentage of GDP		Government expenditure on education as a percentage of total government expenditure	
	2000	2014	2000	2014
Australia	4.86	5.23	13.36	13.90
Austria	5.60	5.50	10.51	10.48
Belarus	6.20	4.99	-	12.41
Belgium	5.84	6.59	11.88	11.97
Brasil	3.95	5.99	11.45	15.97
Finland	5.73	7.17	12.17	12.32
Georgia	2.18	1.98	12.54	6.71
Germany	-	4.95	-	11.14
Iceland	6.50	7.81	15.74	17.67
Israel	6.11	5.76	12.92	14.28
Japan	3.51	3.59	9.93	9.29
Latvia	5.29	5.29	14.60	13.96
Netherlands	4.63	5.53	11.08	11.97
New Zealand	6.63	6.34	18.53	18.05
Norway	6.46	7.37	15.49	17.03
Republic of Korea	3.45	5.05	-	-
RF	2.94	3.86	8.95	11.15
Ukraine	4.17	5.86	11.36	13.12
United Kingdom	4.11	5.73	12.05	13.88
United States of America	4.85	5.38	-	14.55

In actual practice is not simply an extension of private sources, and the characteristic of the mechanism of funding for education is the convergence, the acquisition of common features between the public and private sectors, combining different financial flows to pay for their studies. In addition

<sup>7</sup> Education statistic. – [ Electronic resource]. Retrived from: <http://data.uis.unesco.org/> [in English]

to traditional sources (public, private, business) develop mixed and new payment mechanisms for educational services (loans for study, education vouchers, etc.), the purpose of which is to improve the financing and delivery of education, the introduction of elements of competition and accountability for the quality of education provided. Broadening the range of income from research universities, innovation means that evolve and become more complex their entrepreneurial function. Significant source of financing higher education institutions are external sources: grants from international organizations and foundations, and foreign universities, etc.

**Changing the organizational forms of educational activity.** The current trend of diversification of educational activities forms of is predetermined by a number of factors: the growth of the mass, and even a general higher education, increased competition between universities at the national, regional and global levels, and it is important - changes in the idea and mission of the university.

The emergence of the university as an institution of higher education refers to the period of the early Middle Ages, to the XII century, when placed in front of them began to set educational, educational, cultural and theological character. The purpose of the University is the development of intellect and spirituality, student learning is not so much a profession as broadmindedness and the provision of certain life choices.

In the nineteenth century, the idea of a classical university has acquired a new shape, and it is connected with the name of Wilhelm von Humboldt, that his ideas about new tasks of this institution was able to put into practice - in the creation of the University of Berlin. In his vision, the university also has to be separated from practice, and its main function - an educational and research activities. And the value of the university is significant in the sense of keeping the moral values, since its mission is based on the formation of common cultural and moral values at first the national citizen, and then - intellectual. As such, the actual idea of the university and entrenched in all countries and lasted until our time.

The modern era has brought a sea change in society, which can not be displayed in the mission, functions and tasks of universities. In the scientific literature even a thought about the «death of the university», «university in ruin», pointing to the need to rethink their public purpose<sup>8</sup>. The need for universal transfer of knowledge in modern conditions is understood only in conjunction with providing students with technology skills working with large volumes of information.

The embodiment of moral values, along with the national idea in general is compromised in a situation where globalization blurs all boundaries, mixes large numbers of people of different cultural, religious and political models. This is a huge problem in modern social practice, which is the subject of many studies and that still has not found his unique interpretation. An integral feature of modernity is strengthening practical focus (utilitarianism), university education, which, together with the growth of mass higher education will inevitably encourages universities to work more closely with the business. The general scarcity of funding for higher education, in turn, the important issue of finding new types of activities, including business, to the inflow of additional financial resources.

In such circumstances, classical universities are transformed, is expanding the range of their functions: in the classical model of the University «Humboldt» type (which provides for the implementation of two major missions - studies and research) added function of entrepreneurship, consulting, etc. There is a differentiation of most training programs, they are divided into two types: Type A program (preparation for the research activity) and type B program (a program of practical direction). Along with traditional, classical universities there are new forms of university activity: corporate universities, business universities, open universities, university network, cross-border education.

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8 Newmen J.G. Idea universiteta. Minsk, 2006. [in Russian]

The processes of concentration of educational activities are manifested in the appearance of super-large universities with a population of 20-40 thousand students, which function as huge campuses. With the spread of ICT is developing distance education, as in conventional universities, and in separate, specialized schools.

The real alternative to the usual for us to higher education institutions to become corporate universities that operate within large multinational corporations. These schools do not have a rigid academic structure, typical of classical universities, they should not be accredited, and the main purpose of their activities is the organization at the international level, training of highly qualified human resources in accordance with the requirements of the global production.

The need to strengthen the practical direction of university education and the consequent transformation of the traditional functions of universities is implemented in the emergence of the concept of so-called entrepreneurial universities. They can function as a business school or university, but their hallmark is an active business activities. And it is not only at the level of the whole institution, all of the structural units (faculties, departments, a separate program) are aiming at making money and getting business profits.

Alternative to traditional institutions of higher education have become so-called public universities, which are really open to all sectors of the population and provide a great opportunity for lifelong learning. The first such institution was the Open University in the UK (1969). Then they were based in other countries: the University of Hagen (in 1974.), The National Centre for Distance Learning in France, the National University of Distance Education in Spain (in 1972 ), the National Open University Indira Gandhi in India, and the like. In the Open University greatly simplified order entry, there is no need to document the completion of the previous level of formal education, greatly democratized the process of learning.

The new stage in the expansion of information and communication technologies and new challenges for traditional forms of learning has been the spread of MOOC (massive open on-line courses). The idea of MOOC began to be realized in the 90's of the last century, but a new impact was received in the fall of 2011, when leading American universities (Stanford and Massachusetts Institute of Technology) presented open-access curriculum that are taught by leading professors.

Technological peculiarities of the implementation of the MEP include the need to create special platforms that provide not only the possibility of open access to certain courses, but also the possibilities of interactive communication, discussion of all questions on the forum and crediting the knowledge. If at first these courses were of a cognitive nature, now they are discussing not only the technologies of free acquaintance with the content of the disciplines, but also the possibility of enrollment in their development.

The spread of new information and communication technologies change the social structure of society, creating a new system of communication technology that has found expression in the approval of the idea of developing a «network society». The education system also arises network technology chain. The so-called network universities created through scientific collaboration of the intellectual elite of various countries: the scientific society of scientists from different countries do not have well-defined spatial organization, they're going to thematic conferences, congresses, meetings are held in hotels are funded by grants or contracts.

It has long been known is the practice of «summer» of universities that operate on the edge of science, education and recreation. A new form of activity at the international level: international general educational and research projects, joint education, joint diplomas (the ability to simultaneously receive diplomas of higher education institutions in different countries), etc.

**The internationalization of education.** The continuous process of internationalization at the present stage is manifested in the development of

globalization: in the formation of the global education market (export and import of educational services, increasing the number of foreign students), the emergence of international forms of organization of educational activities (international common educational and research projects, joint education, opportunities simultaneous production of diplomas of higher education institutions in different countries), the internationalization of financial education resources: attracting external sources in the form of education funds, grants, loans from international organizations, funds and agencies of other countries.

Financial contributions to the education from abroad are carried out by special programs implemented by international organizations (UNESCO, the European Union and others), foreign public and private funds. In developing countries, often a primary role in the financing of education plays international aid, the value of which should be included in the total cost.

As noted above, the first characteristic feature of the process of internationalization of education advocates increase in the number of foreign students in the world in absolute and relative terms. The global education market is developing very dynamically, according to Table 6, it can be seen that for 10 years from 2000 to 2012 the number of foreign students has increased more than two times (217%). It shows an understanding of the world of the international prospects of this market niche of services and that they rush to occupy a main place.

Among the countries - the world's leading educational services are: United States, United Kingdom, Australia, Germany, etc. The change of forces on the world market is clearly traced. At first, it found expression in reducing the share of countries OECD. The main actor – USA – can still save their positions (near 19% world market), but only thanks to the active actions of attracting young people from another countries. In general, part of the OECD countries relative to the total number of foreign students in the world is consistently high, up to 2007, it exceeded 84 per cent, but in

2014 we witnessing its decline to 72 percent (Table 5.6). The positions of many active actors (Australia, Austria, Germany, France, United Kingdom etc.) have decreased or remained at the same level, although in general the number of foreign students have increased (Table 5.7).

**Table 5.6**

**Number of foreign students in the world and regions<sup>9</sup>**

Regions	2000	2010	2012	%
Africa	100 031	178 716	196 568	197
Asia	334 562	726 054	806 281	241
Europe	935 879	1 984 442	2 160 874	231
Northern America	569 640	880 427	961 967	169
Latine Amrica and Carribe	28 945	76 041	71 468	247
Oceania	118 646	350 165	330 886	279
<b>World</b>	<b>2 087 702</b>	<b>4 195 845</b>	<b>4 528 044</b>	<b>217</b>
<b>OECD</b>	<b>1 604 601</b>	<b>3 181 939</b>	<b>3 415 975</b>	<b>213</b>
<b>EU</b>	<b>822 025</b>	<b>1 686 734</b>	<b>1 822 330</b>	<b>222</b>
<b>G20</b>	<b>1 730 913</b>	<b>3 432 928</b>	<b>3 712 641</b>	<b>214</b>

The distinctive feature of the market development in 2007 – 2014 was the emergence of new active actors. This is, above all, China, which has increased its share from 1,4 to 2,5%, and overall number foreign students has increased by 2,5 times – from 42,1 to 108,2 thousands. The market share of Saudi Arabia has increased from 0,6% to 1,7% and the number of foreign students has increased more than 4 times – from 17,7 to 71,8 thousands; the market share of Russia has increased from 2% to 5%, number of foreign students – in 3,5 times from 60,3 to 213,4 thousands.

52147 foreign students were studying in Ukraine in the 2016-2017 school years. This made it possible to get 800 thousand hryvnia to the budgets of the higher educational institutions of Ukraine, as well as provide jobs for 4 million teachers. Also, foreign students spend about \$500 million a year for his living. The foreign students came to study from 137 countries, including from Azerbaijan – 8833, Turkmenistan – 6291, India – 5885, Niger – 3035, Morocco – 2854, Georgia – 2605 etc. Ukraine's share is about 1.5 percent of

<sup>9</sup> Education at glance 2016. OECD indicators. - [Electronic resource]. Retrived from: [www.oecd.org/publishing/corrigenda/](http://www.oecd.org/publishing/corrigenda/) [in English]

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

the global market, which is higher than that of Sweden and Switzerland, is comparable with Belgium and Italy<sup>10</sup>.

**Table 5.7**

**Number of foreign students in some countries and the global market share (%),2007 - 2014<sup>11</sup>**

Countries	2007		2010		2014	
	Number of foreign students	Global market share	Number of foreign students	Global market share	Number of foreign students	Global market share
<b>World</b>	<b>3 094 942</b>	100	<b>3 737 676</b>	100	<b>4 283 577</b>	100
<b>OECD</b>	<b>2 363 679</b>	76.4	<b>2 726 061</b>	72.9	<b>3 081 207</b>	71.9
<b>Countries –nonOECD</b>	<b>731 263</b>	23.6	<b>1011 619</b>	27.1	<b>1 202 370</b>	28.1
<b>EU</b>	<b>1 213 109</b>	39.2	<b>1 363 632</b>	36.5	<b>1 496 149</b>	34.9
Australia	211 526	6.8	271 231	7.3	266 048	6.2
Austria	43 572	1.4	68 619	1.9	65 165	1.5
Belgium	25 202	0.8	36 126	1.0	55 516	1.3
Canada	92 881	3.0	106 284	2.8	151 244**	3.5
France	246 612	8.0	259 935	7.0	235 123	5.5
Germany	-	-	-	-	210 542	4.9
Italy	57 271	1.9	69 905	1.9	82 450**	1.9
Japan	125 877	4.1	141 599	3.9	135 803	3.2
Netherlands	27 449	0.9	27 968	0.8	68 943**	1.6
New Zealand	33 047	1.1	37 878	1.0	48 892	1.14
Turkey	19 257	0.6	25 838	0.7	54 387**	1.3
Sweden	22 135	0.7	31 534	0.8	25 361	0.6
Switzerland	38 317	1.2	38 195	1.0	49 536	1.2
United Kingdom	351 470	11.4	389 958	10.4	428 724	10.0
USA	595 874	19.3	684 807	18.3	842 384	19.7
Ukraine	29 614	1.0	37 674	1.0	60 037	1.4
Southern Africa	59 237	1.9	66 119	1.8	42 351**	1.0
China	42 138	1.4	71 673	1.9	108 217	2.5
Russia	60 288	2.0	129 690*	3.5	213 347	5.0
Saudi Arabia	17 716	0.6	26 871	0.7	71 773	1.7
UAE	-	-	-	-	64 119	1.5

\*-2009

\*\*-2013

10 Osnovni pokazniki diyalnosti vizshih navchalnih zakladiv Ukraini na pochatok 2016/2017 navchalnogo roku. Kyiv, 2017. – [ Electronic resource]. Retrived from: [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua) [in Ukrainian]

11 Education statistic. – [ Electronic resource]. Retrived from: <https://knoema.com/WBEDS2017/world-bank-education-statistics?region=1002250&indicator=1036270> [in English]

The internationalization of education is manifested not only in the growth of the number of foreign students. Together with the active encouragement of his arrival in their country of students from abroad, universities expanded its expansion in other countries. The rise of such activity is the basis of the appearance in the 90 years of the twentieth century, and the rapid growth of the so-called “cross-border education» (transborder education). This phenomenon can not be ignored, because it is based on certain economic mechanisms related to financial flows, which are quite significant.

An important indicator of the export orientation of the country is the ratio of the number of foreign students and the total number of students. Among the countries this ratio is the largest in Luxemburg – 44%. This indicator is 19% in the New Zealand, 18% - in the Australia and the United Kingdom, 17% - in the Switzerland, 15% - in the Austria. The average number of foreign students in OECD countries is 6%, in EU - 8%<sup>12</sup>.

The increase in the proportion of foreign students at higher levels of education is also characteristic. This indicator is much less at bachelor’s programs, while at the master’s and doctor’ level it is significantly higher. This is evident from the table 5.8 data:

Of course, for each country, it is important not only attraction foreign students in the national system of education, but also the dynamics of the departure of their youth abroad. This indicator is under the influence of a large number of factors. An increase in the flow of traveling abroad is not always associated with a disadvantaged situation in the country. The impact of globalization is manifested in the fact that young people are increasingly active in finding job and place of living. As a result, in the liders of countries-importers we see quite different countries: USA, Saudi Arabia, Turkey, Japan, Vietnam, Russia etc. (table 5.9). The dynamics of the departure of

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12 Education at glance 2016. OECD indicators. - [ Electronic resource]. Retrived from: [www.oecd.org/publishing/corrigenda/](http://www.oecd.org/publishing/corrigenda/) [in English]

young people abroad for the purpose of education is very different in countries. The total number of outbond students has a tendency to decrease in such countries as Greece, Turkey, Japan, United Kingdom. At the same time, countries such as the Saudi Arabia, Vietnam, Brasil, Mexico, Ukraine, USA, Georgia, Tadjikistan, Russia show a clear upward trend.

**Таблица 5.8**

**International mobility in OECD countries, %<sup>13</sup>**

countries	Share of international students on the different levels of the higher education					% increasing, 2014/2013
	All higher education	Short programs	Bachelor programs	Master programs	Doctor programs	
Australia	18	13.3	13.1	40	34	6
Austria	15	1.0	18.6	18	25	8
Belgium	11	4.9	8.2	20	37	24
Canada	10	9.0	8.1	14	27	12
Denmark	10	13.1	5.5	17	30	2
Finland	7	-	5.2	12	19	4
France	10	4,4	7,3	13	40	3
Germany	7	0	4,4	12	7	7
Ireland	7	1,1	5,8	14	23	11
Japan	3	3,4	2,5	8	19	2
Luxemburg	44	11,3	25,3	68	85	3
New Zealand	19	27,4	14,3	23	45	18
Sweden	6	0,2	2,4	9	33	0
Switzerland	17	0	9,9	28	53	5
United Kingdom	18	5,5	13,7	37	42	3
USA	4	2,0	3,5	9	35	7
<b>OECD</b>	<b>6</b>	<b>3,0</b>	<b>4,9</b>	<b>12</b>	<b>27</b>	<b>5</b>
<b>EU22</b>	<b>8</b>	<b>4,5</b>	<b>6,1</b>	<b>13</b>	<b>22</b>	<b>4</b>

\* - data not available

13 Education at glance 2016. OECD indicators. - [ Electronic resource]. Retrived from: [www.oecd.org/publishing/corrigenda/](http://www.oecd.org/publishing/corrigenda/) [in English]

**Table 5.9.**

**Number of students studying abroad from the country of origin<sup>14</sup>**

	1998	2000	2005	2010	2013	%, 2013/1998
USA	38 208	43 482	52 699	57 506	60 292	157.8
Saudi Arabia	9 941	10 626	12 398	42 651	73 548	739.9
Vietnam	7 858	9 148	20 801	47 268	53 546	681.4
Russia	26 096	28 634	39 508	50 403	50 642	194.1
Turkey	51 067	51 604	55 408	51 885	44 964	88.1
Ukraine	13 064	20 891	26 698	36 203	39 670	303.7
Greece	62 059	63 676	41 687	29 226	34 029	54.8
Japan	57 088	59 302	69 273	40 330	32 332	56.6
Brasil	15 596	17 274	19 424	27 753	32 051	205.5
United Kingdom	28 142	22 328	23 053	24 600	27 377	97.3
Mexico	13 149	14 230	23 048	26 072	27 118	206.2
Thailand	21 553	21 007	25 618	28 304	25 517	118.4
Sweden	12 819	12 601	13 350	15 540	17 685	138.0
Georgia	3 857	4 367	7 374	8 736	9 905	256.8
Tadjikistan	1 292	1 396	3 022	8 342	9 749	754.6

The leading countries of the world have long recognized the direct relationship between the dynamics of economic development and the effectiveness of the national education system. An example of a successful strategy for the development of education demonstrate the developed countries, as well as an outsider. For example, Japan has since 1983 initiated a policy of attracting foreign students, teachers, researchers. In 2005, the policy of internationalization of higher education has been specified in the three tasks: teaching the discipline of English, a plan to attract 300,000 international students by 2020 («300,000 international students plan»), the development of 30 universities as centers of internationalization («Global 30»). Number 300000 is not accidental, it is - 10% of the total number of students in Japan. At the moment, the figure is 123 million or 4%. In 2009, 13 universities were selected, including both private and public (The

<sup>14</sup> Education statistic. – [ Electronic resource]. Retrived from: [http://knoema.com/UNESCOGED2015/unesco-global-education-digest-and-regional-education-survey-2015\\_\[in English\]](http://knoema.com/UNESCOGED2015/unesco-global-education-digest-and-regional-education-survey-2015_[in English])

Tokyo University, Kyoto University, Osaka University, Waseda University, Tohoku University, Nagoya University, and others). In 2010, the number of universities has grown to 20, and already 2020 30 universities will act as the hub of globalization of higher education in the country. All universities will be selected to receive priority financial support in the amount of 200-400 million yen per year for five years, which will allow each university to accept foreign students 3000-8000. These universities will issue diplomas to students only in English, but will also enhance the educational standards through the organization of non-Japanese faculty<sup>15</sup>.

China implemented the 211 Project in 1995 which delivered mission to transform the basic first-class universities in leading universities in the world. According to a special state program was selected 100 universities, which allocated \$ 20 billion. In 1999, the task has been specified - in 2020 to create 100 world-class universities. The primary goal of the latter is to create nearly 40 research-intensive universities with an international impact in the near future.

In late September 2017 China officially launched the Double World-Class Project. This project includes building world-class universities with Chinese characteristics and Chinese first-class disciplines at a global level. It aims for China to have 42 world-class universities and approximately 456 world-class disciplines in 95 universities by mid-century. The new project does not merely aim to improve the educational or research quality of Chinese universities as described in the late 1990s. It has a more ambitious goal of boosting China's soft power<sup>16</sup>.

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15 Orusova O.V. Sovremennie tendencii razvitiya visshogo obrazovaniya v Yaponii // Vestnik visshykh shkoly (Alma mater). – 2010. -№8. – P.64-69. [in Russian]

16 Futao Huang. Double World-Class Project has more ambitious aims. – University World News. - 01 October 2017. – issue 476. - [Electronic resource]. Retrieved from: <http://www.universityworldnews.com/article.php?story=20171001102220526&query=china>

The reform of the education system in China is complex: the control system provides a significant strengthening of the autonomy and decentralization of institutions in all areas of activity; diversification of funding sources and a significant expansion of the rights of universities to attract additional financial resources; allocation system can only graduates for teaching and other professions; improvement of the educational process, the definition of priority areas of training, which is available for public order and the like.

### **Conclusions.**

Thus, the development of the modern education market at the global level is characterized by active dynamics and complex structural processes associated with increased competition between countries. The main centers and, accordingly, the leading countries for the export of educational services have been formed. The hard competition is constantly changing positions; however, the undoubted leaders remain: the United States, Britain, Australia, France, Germany, Russia, Japan, and Canada. New actors have been bursting and gradually crowding the leaders: China, Turkey, Saudi Arabia, Korea, South Africa, etc. The most attractive for foreign students are the curriculum of master's and doctoral levels. The landscape of the import of educational services is also changing. The most active donors of foreign students are very different countries: developed countries (USA, Great Britain, and Japan), successful developing countries (Turkey, Brazil, Mexico) and also countries with certain development problems (Ukraine, Vietnam, Georgia, etc.).

At the same time, in 2016 and 2017, new trends in the market for higher education services emerged. These tendencies are connected with the election of President Trump and Brexit. They are manifested in a decrease in the influx of foreign students into the world market leaders. This inevitably means an increase in the influx of students to Asian countries. All these trends radically change the overall configuration of the higher education market and, of course, further exacerbate competition.

**REFERENCES:**

- Education statistic. – [Electronic resource]. Retrived from:<http://data.uis.unesco.org/Index.aspx?queryid=147>. [in English]
- Education at glance 2016. OECD indicators. - [Electronic resource]. Retrived from:[www.oecd.org/publishing/corrigenda/](http://www.oecd.org/publishing/corrigenda/) [in English] Education statistic. – [Electronic resource]. Retrived from: <http://data.uis.unesco.org/>
- Education statistic. – [Electronic resource]. Retrived from: <https://knoema.com/atlas/topics/Education/Tertiary-Education/Gross-enrolment-ratio>. [in English]
- Education statistic. – [Electronic resource]. Retrived from:[://stats.oecd.org/Index.aspx?datasetcode=EAG\\_NEAC#](http://stats.oecd.org/Index.aspx?datasetcode=EAG_NEAC#) [in English]
- Education statistic. – [Electronic resource]. Retrived from: <http://data.uis.unesco.org/> [in English]
- Education statistic. – [Electronic resource]. Retrived from: <https://knoema.com/WBEDS2017/world-bank-education-statistics?region=1002250&indicator=1036270>. [in English]
- Education statistic. [Electronic resource]. Retrived from: [http://knoema.com/UNESCOGED2015/unesco-global-education-digest-and-regional-education-survey-2015\\_](http://knoema.com/UNESCOGED2015/unesco-global-education-digest-and-regional-education-survey-2015_)[in English]
- Futao Huang. Double World-Class Project has more ambitious aims. – University World News. - 01 October 2017. – issue 476. - [Electronic resource]. Retrived from:<http://www.universityworldnews.com/article.php?story=20171001102220526&query=china>. [in English]
- Newmen J.G.** Idea universitteta. – Minsk, 2006. [in Russian]
- Orusova O.V.** Sovremennie tendencii razvitiia visshogo obrasovania v Yaponii // Vestnik visshyeh shkoli (Alma mater). – 2010. -№8. – P.64-69. [in Russian]
- Osnovni pokazniki diyalnosti vizshih navchalnih zakladiv Ukraini na pochatok 2016/2017 navchalnogo roku. Kyiv, 2017. [Electronic resource]. Retrived from: [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua). [in Ukrainian]
- Polyakov M.V., Savchuk V.S.** Klassichni universitet: evolutzia, suchasny stan, perspektivi. – Kiev, 2004. [in Ukrainian]

## 5.2. Improving the Standard of Living as a Strategic Priority of Ukraine and Georgia

**The Standard of Living as an Objective and Criterion of Economic and Social Policy.** Standard of living is one of the most important socio-economic categories that are often referred to in discussions about the position of a person in society, the opportunities for meeting the needs of the residents, and the possibilities of human development.

The “standard of living” category is a complex and structurally systematic object of scientific economic and social research which in essence combines a wide range of socio-economic relations that characterise the peculiarities of the a grade or level of subsistence and living conditions available to a person, family, social class, community and population in general. The peculiarity of this category lies in the fact that it cannot be described by a single indicator and may be objectively determined by a wide spectrum of characteristics relating to specific elements or certain manifestations of relations that arise in the process of society functioning. Therefore, it is important to clearly define the meaning of the “standard of living” concept.

It is quite common when the standard of living is identified with the notion of “well-being” which is defined in terms of access to consumption. From the standpoint of human development concept, the following is the most complete definition of the “standard of living” concept: the *standard of living is a complex socio-economic category that reflects the level of development of the physical, spiritual and social needs of the population, the degree of their satisfaction available to a person, and conditions for the development and satisfaction of these needs existing in a society.*

The “standard of living” concept is often interpreted as the degree of satisfaction for material, spiritual and social needs available to the population. This definition reflects the statics of living standards. Meanwhile,

the standard of living is a dynamic process which is affected by numerous factors. On the one hand, the standard of living is determined by the composition and level of material needs that are constantly changing. On the other hand, the standard of living is limited to the ability to meet the needs basing on the situation in the goods and services market, income of the population, wages of employees. At the same time, both wages and living standards are determined by the scale and efficiency of production, scientific and technological progress, cultural and educational level of the population, the level of corruption, political situation, etc.

The International Labour Organization states that: “Everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.” Every country implements these rights on the basis of the national concept of the living standards.

Raising the standard of living is simultaneously a goal and a priority of social development and is associated with social progress of society. The dynamics of the indicators of the standard of living indicate the results of economic development of the country, as well as the degree of socialisation of the economy. Raising the standard of living becomes particularly important in a society focused on human development.

The indicators of income as the main source of satisfaction of personal material needs and increase of welfare take centre stage in the system of measuring the standard of living. We view the growth of income through the concept of human development as one of the major means that promote the increase of human capabilities and the level of well-being. However, income is not a measure of human happiness. It is definitely not enough to meet many urgent needs that go beyond material well-being. Thus, history demonstrates a lot of examples, when the increase in national wealth was not accompanied by an adequate expansion of human freedom, the strengthen-

ing of human health or the improvement of their lives, liberty and security. A similar situation was typical for the former USSR in the 60's and 80's. Moreover, paradoxically, economic growth can be accompanied by rising poverty in the country.

At the same time, the manifestations of human livelihoods and their needs are very diverse; therefore it is impossible to allocate income as one universal indicator for a complete assessment of living standards of the population. This requires a cumulative system of features, indicators and parameters that, in their unity, are able to reflect the state of satisfaction of social needs according to their individual types, assess the level of life guarantees, conditions for the formation and distribution of material goods, spiritual benefits, and services in the country.

A holistic system of indicators of the standard of living of the population should consist of both quantitative and qualitative indicators, grouped according to certain features. However, the practitioners use only the indices of material consumption, indices of physical volumes of consumed services, needs satisfaction coefficients, etc. We suggest a system of indicators and a methodology for evaluating them which allows assessing the conditions in a society for meeting human needs most accurately, basing on key macro-economic indicators, taking into account shadow employment and shadow wages without which the assessment of living standards is inadequate.

**Indicators<sup>17</sup> of the Standard of Living.** The standard of living as a component of social security is characterised by the following indicators<sup>18</sup>:

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17 *An indicator* is an observed relative value of a variable or an attribute which helps to control presence, absence or state of the concept, phenomenon, process, system being studied and generates an information sign in a form that is convenient for perception by the subject of control; *A variable* is a logical set of attributes, while *an attribute* is a quantitative and qualitative characteristic of phenomena, processes and objects.

18 Kharazishvili Yu.M. Prohnozuvannia indykatoriv, porohovykh znachen ta rivnia ekonomichnoi bezpeky Ukrainy u serednostrokovii perspektyvi [Forecast of Indicators, Threshold Values and Economic Security Level of Ukraine: Medium-Term Prospects]; analit. dop. [Analytical Report]. Kyiv: NISD, 2014, 117 p. [in Ukrainian]

1. labour use level (the ratio of the optimal demand for labour to its supply) ( $S^{19}$ );
2. compensation of employees in output (S);
3. GDP created by shadow employment and wages, % of GDP (D);
4. shadow employment to total employment (D);
5. expenditure on education to output<sup>20</sup>, % (S);
6. healthcare expenditure to output, % (S);
7. the ratio of average wages to a living wage (S);
8. wage share in the structure of income, % (S);
9. pension expenditure to output, % (D);
10. pension fund deficit to output, % (D).

In order to calculate a great number of the indicators of the standard of living, we use the original author's model of the aggregate supply function using the modified celebrated Cobb-Douglas production function<sup>21</sup>:

$$V_t^S = e^{\gamma} [N_{ef,t} (P_t) \frac{W_t}{P_t} k_{sn}]^{\alpha_t} [\vartheta_t(I_t) K_t (K_{t-1}, I_{t-1}, A_{t-1}, P_{t-1})]^{1-\alpha_t} \quad (1)$$

In this formula,  $V$  is output;  $e^{\gamma}$  is the scientific and technological progress, STP;  $\gamma$  – STP rate;  $L$  is labour costs ( $L = N_{ef} (W / P) k_{sn}$ );  $N_{ef,t} = \xi_t N_t$  is the effective number of taxpayers (hired workers plus another category of employed, normalised to the equivalent of employees);  $\xi_t$  is the share of

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19 S are stimuli which increase is preferable; D are deterrents (hindrance factors) which decrease is preferable.

20 According to the System of National Accounts (SNA), the output is equal to the sum of intermediate consumption (IC) and GDP (GVA for types of economic activity);

21 Kharazishvili Yu.M. Svitlo ta tin ekonomiky Ukrainy: rezervy zrostantia ta modernizatsii [Light and Shadow of the Economy of Ukraine: Potential for Increase and Modernisation]. *Ekonomika Ukrainy* [Economy of Ukraine], 2017, no. 4(665), pp. 22-45. [in Ukrainian]

the number of taxpayers in total employment;  $N_t$  is total employment;  $W$  is average nominal wages of employees;  $k_{sn}$  is social load index;  $\vartheta$  is capital to net sales ratio;  $I$  is investment;  $A$  is consumption of fixed capital;  $K$  is cost of capital;  $a$  is coefficient of elasticity, COE;  $P_t$  is GDP (GVA) deflator;  $t$  is the period of time.

Generally, part of the indicators of living standards (wage share, educational expenditures, healthcare expenditures, pension expenditures and pension fund deficit) is calculated relative to the GDP of each country. Sometimes it leads to a ridiculous or absurd result in countries with a high level of corruption and shadow economy, as in Ukraine, for instance: such definition of outlined indicators results in their best value among economically developed countries. Nevertheless, their real absolute values are extremely low; they are insufficient even when compared to less developed countries. This can be explained by the artificial increase of intermediate consumption and corresponding reduction in GDP relatively to which these indicators are calculated. Therefore, it is more appropriate to measure these indicators relative to the output rather than the GDP which is artificially understated because of the massive shadow economy development.

The calculation of our chosen indicators of the standard of living is carried out according to the following method:

1) *Labour use level (the ratio of the optimal demand for labour to its supply)*  $k_{np,t}$  Microeconomics substantiates that the maximum profit can be obtained when the marginal product of labour ( $P$ ) is equal to the nominal wage rate  $W$  (2):

$$P \frac{\partial V}{\partial L} = W . \quad (2)$$

After applying the transformation [eq. (2)] to the output function  $V$  [eq. (1)], we can get the function of optimal demand for labour  $N_t^D(P)$ <sup>22</sup> (3):

$$N_t^D = \frac{\vartheta_t K_t P_t}{\xi_t W_t k_{sn}} (e^{r_t} a_t)^{\frac{1}{1-a_t}} \quad (3)$$

On the other hand, if we use household utility function  $U = \sqrt{yF}$  which reflects the households' possibility to receive income  $y$  considering that they have free time  $F$  according to the method of Lagrange multipliers, we can obtain an equation for labour supply function  $N_t^S(W)$  in the presence of money illusion<sup>23</sup> (4):

$$N_t^S = \frac{T_N}{2} - \frac{rK^*}{2W} = \frac{T_N}{2} - \frac{I_P T_N}{2W} = 0.5T_{N,t} \left( 1 - \frac{I_{P,t}}{W_t} \right). \quad (4)$$

where:  $T_N$  is average annual population;  $r$  is marginal productivity of capital;  $K^*$  is property (capital) owned by households;  $I_P$  is income per capita received from property owned by households.

Then, the labour use coefficient can be defined as the ratio of the function of optimal demand for labour  $N_t^D(P_t)$  to the labour supply function  $N_t^S(W_t)$  (5):

$$k_{np,t} = \frac{N_t^D(P_t)}{N_t^S(W_t)}. \quad (5)$$

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22 Kharazishvili Yu. Kласична модель функції сукупної пропозиції в контексті кейнсіанської теорії [Classical Model of the Aggregate Supply Function of in the Context of the Keynesian Theory]. *Statystyka Ukrainy* [Statistics of Ukraine], 2006, no.1, pp. 42–48. [in Ukrainian]

23 Tarasevich L. S., Galperin V. M., Grebennikov P. I., Leusskii A. I. *Макроекономіка* [Macroeconomics]. Ucheb. obshch. red. Tarasevicha L. S. Izd. 3–e, pererab. i dop. [Prepared under the general editorship of Tarasevich L. S., 3<sup>rd</sup> ed., revised and corrected by the author]. St. Petersburg: Publishing House SPbGUEF, 1999, p. 55. [in Russian]

2) *Compensation of employees in output*  $a_t$ . It's a common fact that social and labour sphere is an integral part of the economy. An individual his/her immediate needs, interests, standard of living is its major focus. At the same time, the very individual is the main element of the productive forces of society; moreover, the success of economic and social reforms largely depends on the work motivation of individuals. Therefore, the share of the compensation of employees in output is one of the main indicators that gives an idea of the real level of socio-economic development in the country. According to the System of National Accounts (SNA), compensation of employees includes wages and salaries payable in cash or in kind, social insurance contributions payable by employers, which include contributions to social security schemes, actual social contributions to other employment-related social insurance schemes and imputed social contributions to other employment-related social insurance schemes.

The application of the aggregate supply function model allows calculating the elasticity coefficients of the production function at labour and capital costs basing on the official statistics for the country, regions and major economic activity types that determine the distribution of income between labour and capital (6):

$$a_t = \frac{\xi_t N_t^D (P_t) \frac{W_t}{P_t} k_{sn}}{V_t}. \quad (6)$$

3) *GDP created by shadow employment and wages*  $k_{shadow\_op,t}$ . Low wages is the result of the current imperfect Ukrainian tax system. Paradoxically, the main component of tax revenue is labour, more precisely, payroll. As a result of all charges and deductions, about 75% of tax revenues are directly or indirectly linked to payroll. However, at the same time, wage in Ukraine is one of the lowest in the world. Here we see an incredible paradox: the most oppressed production factor – labour – has become the largest

source of revenue of the country's budget. This reality is the outcome of the disproportions between the primary production factors (labour and capital) which results in unjustifiably high tax burden on income of both the population and business.

The application of the method of calculating shadow GDP that we have developed and tested<sup>24</sup> makes it possible to calculate the internal part of GDP which is created by the shadow economy taking into account the consumption multiplier<sup>25</sup> ( $OP_{shadow,t}$ ). Consequently, the share of GDP created by shadow employment and wages will determine the level of the shadow economy in GDP:

$$k_{shadow\_OP,t} = \frac{OP_{shadow,t}}{GDP_{of,t}} \cdot 100\%. \quad (7)$$

4) *Shadow employment to total employment*  $k_{shadow\_N,t}$ . Shadow employment is an indisputable fact in a transformational economy, and its illegality is due to the weakness of socio-economic institutions. The increase in shadow employment leads to the production reduction in the main types of economic activity, low wages in production, high level of poverty of the working population, high level of taxation of legal business, contributions to state social funds, low compliance with established laws and, subsequently, loss of confidence to the law enforcement and judicial system of the state.

At the same time, employment in the shadow economy facilitates the development of new entrepreneurial abilities of an individual, the full implementation of his/her ability to work, adaptation of the workforce to modern

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24 Kharazishvili Yu.M. Svitlo ta tin ekonomiky Ukrainy: rezervy zrostantia ta modernizatsii [Light and Shadow of the Economy of Ukraine: Potential for Increase and Modernisation]. *Ekonomika Ukrainy* [Economy of Ukraine], 2017, no. 4(665), pp. 22-45. [in Ukrainian]

25 The consumption multiplier that was calculated for Ukraine basing on the model of general economic equilibrium is equal to 2.58. In the absence of similar calculations for Georgia, it is considered to be the same.

market conditions. The ability of an employee to apply his/her ability to work and his/her personal motivation to obtain decent work remuneration (in most cases) determine the relatively high efficiency of the employment formation mechanism in case of shadow economy. Nevertheless, they require increased labour intensity from the employees with no state security guarantees in case illness, accident, old age, etc. Therefore, individuals significantly reduce their future pension.

Hence, in a certain way employment in the shadow sector can protect labour potential, contributes to increasing current incomes, and often even assures the primary survival of a particular share of the population. On the other hand, employment in the shadow economy distracts a lot of resources and efforts to conceal the activity itself, as well as its results, generates additional expenses of business entities, leads to the loss of mandatory tax revenues due to shadow wages that are vital for the state to perform its functions, and contributes to corruption development. Therefore, the quantitative determination and consideration of shadow employment, shadow wages and the search for mechanisms for its reduction is very relevant.

If we use the model of the aggregate supply function<sup>26</sup>, it is possible to measure the capital to net sales ratio for both official and shadow economy for the country in general, regions and major economic activity types. Measuring the capital to net sales ratio gives grounds to the hypothesis of the relationship between the capital to net sales ratio in the shadow economy and the level of shadow employment<sup>27</sup>. With the use of the official and forecast

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26 Kharazishvili Yu. Klasychna model funktsii sukupnoi propozytzii v konteksti keinsianskoi teorii [Classical Model of the Aggregate Supply Function of in the Context of the Keynesian Theory]. *Statystyka Ukrainy* [Statistics of Ukraine], 2006, no.1, pp. 42–48. [in Ukrainian]

27 Kharazishvili Yu.M. Tinova zainiatist ta tinova oplata pratsi v Ukraini: otsinky ta prohnozy [Shadow Employment and Shadow Wages in Ukraine: Estimates and Projections]. *Stratehiia rozvytku Ukrainy (ekonomika, sotsiologhiia, pravo): nauk. zhurn.* [Development Strategy of Ukraine (Economics, Sociology, Law): Scientific Journal] – Kyiv: NAU, 2011, no. 4, vol. 1, pp. 171–182.

statistics on the average annual number of employed and hired employees, it is possible to determine the size of shadow employment proportionally to the capital to net sales ratio. At the same time the ratio of shadow employment  $N_{shadow,t}$  to total employment  $N_t$  will determine the level of shadow employment:

$$k_{shadow-N,t} = \frac{N_{shadow,t}}{N_t}. \quad (8)$$

5) *Public expenditure (consolidated budget expenditure) on education to output*  $k_{edu,t}$ . It is well-known that education is an institution that influences all spheres of society and it is a significant factor in achieving high rates of economic growth and social well-being. It is the constant growth of educational expenditures that help developed countries to maintain leading positions in the world economy, and, in most of them, the state share predominates in the structure of educational expenditure. At the same time, it is not just a single citizen who benefits from of the high level of education; it is society as a whole, since raising the level of general and professional training and qualifications of each employee is an important factor in the labour productivity and economic development growth of the country. In the light of the aforementioned, the fifth indicator will be measured as follows: public expenditure on education  $G_{edu,t}$  to output  $V_t$  ratio (9):

$$k_{edu,t} = \frac{G_{edu,t}}{V_t} 100\%. \quad (9)$$

6) *Public healthcare expenditure to output*  $k_{health,t}$ . The right to healthcare, medical care and health insurance is one of the fundamental civil rights and is usually set out in the Basic Law (for example, in Ukraine it is Article 49, in Georgia – Article 37 of the Constitution). Healthcare is provided by public funding of the relevant socio-economic, health and sanitation,

health improvement and prevention programmes. The state promotes the development of medical institutions of all forms of ownership. The indicator shows what proportion of public resources the state allocates to preserving the health of its citizens and it is calculated as the ratio of expenditures on healthcare  $G_{health,t}$  to output  $V_t$  in per cent (10):

$$k_{health,t} = \frac{G_{health,t}}{V_t} 100\% . \quad (10)$$

7) *The ratio of average wages to a living wage*  $k_{w/LW,t}$ . This indicator is one of the most important social security indicators. A living wage is a state standard used for general assessment of living standards in the country.

Living wage is the pivotal basis of the social policy of the state, since the other standards and results of the social sphere reform and the minimum rates are most consistent with this indicator. It is also one of the important socio-economic indicators the application of which on a massive scale makes it possible to identify objective patterns and measure the general trends in the standard of living both quantitatively and qualitatively. Such measuring is an adequate basis for making informed managerial decisions. Therefore, the closer the standard of living is to the critical level, the more important social role the state plays, moreover, the higher responsibility it bears for the social consequences of economic policy implemented in the country.

The definition of the living wage should be related to socio-economic conditions in the country, and also take into account the need to shift to international standards in a context of growing globalisation. The poverty of the working population who receives wages that are not sufficiently higher than the living wage or even subsistence is a significant issue and it is reflected in the ratio of average wages  $W_t$  to the living wage  $LW_t$  (11).

$$k_{w/LW,t} = \frac{W_t}{LW_t} 100\% . \quad (11)$$

Taking into account the EU and ILO standards<sup>28</sup> for a decent standard of living wage should be at least 3 times higher than the living wage (lower threshold). According to the relevant European standards, the average wage should be 5-6 living wages.

8) *Wage share in the structure of income*  $k_{W/D,t}$ . Income of the population is the sum of monetary and in-kind compensations, particularly: wages and salaries (including income received from abroad), profits and mixed income, property income, social benefits and other current transfers. A high share of wages, along with a low percentage of social income support, indicates the employment efficiency, and the social self-sufficiency of employees.

The indicator is calculated as the ratio of the aggregate nominal wages and salaries of the population  $W_{pop,t}$  to the total income of the population  $D_{pop,t}$  (12):

$$k_{W/D,t} = \frac{W_{pop,t}}{D_{pop,t}} 100\% . \quad (12)$$

9) *Pension expenditure to output*  $k_{pens,t}$ . Pension expenditures perform one of the social security functions. This function is implemented through the accumulation of financial resources in special funds and their distribution for different purposes. These are the actions of state bodies, local self-government, organisations regarding the contributions to social security funds, the allocation of these funds for the payment of pensions, assistance, servicing of pensioners, etc.

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28 Shapoval M., Viter V. Bidnist – problema planetarnoho masshtabu [Poverty is a Problem of Global Scale]. *Uriadovyi kurier* [Governmental Courier], 2007, 11 April, p.6 [in Ukrainian]; Zavora T.M. Pidvyshchennia sotsialnykh standartiv u konteksti zabezpechennia natsionalnoi bezpeky derzhavy u sotsialnii sferi [Improving Social Standards in the Context of Ensuring National Security of the State in Social Sphere] [online]. Poltava National Technical University named after Yurii Kondratiuk. – Retrieved from: [http://www.rusnauka.com/30\\_OINXXI\\_2013/Economics/13\\_146887.doc.htm](http://www.rusnauka.com/30_OINXXI_2013/Economics/13_146887.doc.htm). [in Ukrainian].

In the general case, the Pension Fund balance under consolidated scheme which provides the functioning of the 1<sup>st</sup> tier is defined as follows<sup>29</sup> (13):

$$N_{eff} \cdot W_{ave} \cdot n = k_{pens} \cdot P_{ave} , \quad (13)$$

where  $N_{eff}$  is effective number of payers of insurance contributions;  
 $W_{ave}$  is average wage (average value of the sum relevant for payable insurance contributions);

$n$  is the size (%) of insurance contribution;

$k_{pens}$  is the number of pensioners;

$P_{ave}$  is the average pension.

If the left side of the equation [eq.13] (own revenues of the pension fund) is less than the right side (pension fund expenditures), there is a deficit of the pension fund budget covered only from the state budget. The number of retirees is the only objective variable in the equation [eq.13] (subject to the legislative unchanged retirement age). The other variables are subjective; therefore, they can be potentially regulated by administrative or economic levers.

The ninth indicator is calculated as the ratio of annual aggregate expenditures ( $G_{pens,t}$ ) of the Pension Fund (PF) to output  $V_t$  (14):

$$k_{pens,t} = \frac{G_{pens,t}}{V_t} 100\% . \quad (14)$$

10) *Pension fund (PF) deficit to output*  $k_{def\_PFU,t}$ . The indicator reflects the output share that should cover the deficit of the PF budget and is calculated as the ratio of the PF budget deficit  $Def_{PFU,t}$  to output  $V_t$  (15):

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29 Koval O.P. Perspektyvy vprovadzhennia zahalnooboviazkovoï nakopychualnoi pensiinoï systemy v Ukraini: vplyv na ekonomichnu bezpeku [Prospects for the Introduction of a Compulsory Accumulative Pension System in Ukraine: Impact on Economic Security]. Monohrafiia [Monograph]. Kyiv: NISS, 2012, 240 p. [in Ukrainian]

$$k_{def\_PFU,t} = \frac{Def_{PFU,t}}{V_t} 100\% . \quad (15)$$

One of the reasons for the disparity in the Pension Fund budget is the imbalance of its revenues and expenditures due to the great extent of shadow economy and low wages.

**Integral Assessment Methodology for the Standard of the Living.** The methodology of integral assessment of the standard of living includes the following tasks:

- defining the structure of the assessment of the standard of living;
- forming a list of indicators and components of the evaluation object;
- selecting the form of the integral index;
- selecting the method of valuation;
- scientific substantiation of the dynamic weight coefficients;
- scientific substantiation of the threshold values' vector.

Similarly to the methodology for assessing the level of economic security<sup>30</sup> (of the country, region, types of economic activities) that we recommended and successfully tested in practice we suggest using a methodology for integrating 10 indicators of the standard of living described above which includes the following elements:

- ✓ the form of the integral index is *multiplicative* (16):

$$I_t = \prod_{i=1}^n z_{i,t}^{a_i}; \quad \sum a_i = 1; \quad a_i \geq 0, \quad (16)$$

where:  $I$  is an integral index;  $z$  is a normalised indicator;  $a$  is a weight coefficient;

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30 Kharazishvili Yu.M., Dron Ye.V. Problemy intehralnoho otsiniuvannia rivnia ekonomichnoi bezpeky derzhavy [Problems of Integral Assessment of the Level of Economic Security of the State]. *Bankivska sprava* [Banking], 2015, no. 1 (133), pp. 3–21. [in Ukrainian]

✓ the method of valuation is *combined* (17):

$$S : z_i = \frac{x_i}{k_{norm}}, \quad D : z_i = \frac{k_{norm} - x_i}{k_{norm}}, \quad k_{norm} > x_{max}, \quad (17)$$

where:  $X$  is an indicator value;  $k_{norm}$  is a valuation factor;

✓ weight coefficients are *dynamic*: based on the application of the *Main Components* and the *Moving Matrix* methods (18);

$$C_i \times D_i = \begin{pmatrix} d_1c_{11} + d_2c_{12} + \dots + d_jc_{1j} \\ d_1c_{21} + d_2c_{22} + \dots + d_jc_{2j} \\ \dots \\ d_1c_{j1} + d_2c_{j2} + \dots + d_jc_{jj} \end{pmatrix} = \begin{pmatrix} w_1 \\ w_2 \\ \dots \\ w_j \end{pmatrix}, \quad a_i = \frac{w_i}{\sum w_i}, \quad (18)$$

where:  $C$  is the matrix of absolute values of factor loadings;  $D$  is vector-matrix of dispersions.

Over time, substantial changes in the political and external economic situation lead to substantial changes in empirical estimates of econometric relationships which, in their turn, lead to changes in weight coefficients.

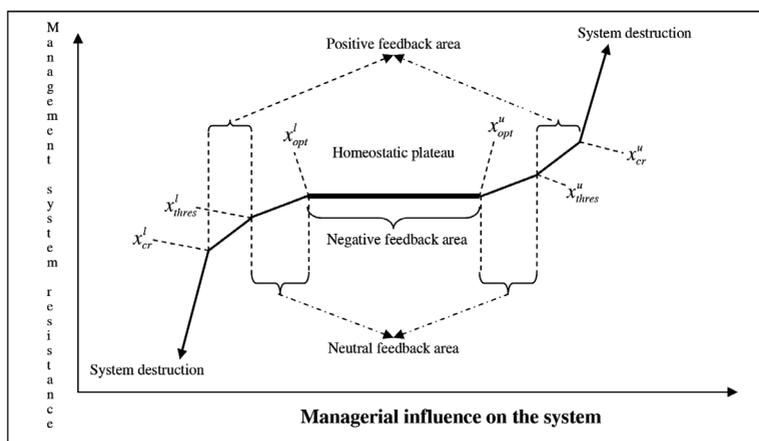
The *Moving Matrix* method is based on the application of the *Main Components* method; it lies in the sequential shift of the matrix of the minimum required size along the time period and the determination of the weight coefficients for the last time period each and every time. Minimum required matrix size (number of rows ( $n$ ) – periods of time) is determined basing on the principle that the number of indicators (the number of columns ( $m$ ) – main components) is equal to the number of positive eigenvalues of this matrix. Typically, the minimum required matrix size is equal to  $(n+1) \times n$ .

✓ threshold values are results of calculations using a *set of methods* (*mainly analytic ones*): functional dependencies; macroeconomic models; stochastic; nonlinear dynamics; legislative approach; heuristic; analogue

approaches; expert assessments; taking into account evaluations of international organisations.

The vector of threshold values is given for each indicator, namely: lower critical value, lower threshold, lower optimal value, upper optimal value, upper threshold, and upper critical value. A pair of optimal values forms a *homeostatic plateau* within which there is a negative feedback and the best conditions for the system existence are created; moreover, the violations of critical values can even lead to the destruction of the system. An integral convolution is made both for indicators of the standard of living and for their threshold values which allows the researchers to particularly *identify* the standard of living.

Consequently, measuring the threshold values is quite closely related to the concept of the dynamic stability of economic system and its individual components, or to homeostasis mechanism. Without this comparison, we will have the dynamics of integral indices which will determine their increase / decrease in certain periods that may lead to an erroneous conclusion regarding the integral index maximisation, nevertheless it worth finding it within the thresholds, preferably optimal values (within the *homeostatic plateau* boundaries) (see Fig.5.1).



**Figure 5.1: 'Homeostatic Plateau' of the Dynamic System**

On each side of the *homeostatic plateau* there are areas with neutral and positive feedback, staying in which is dangerous or threatens the existence of the system in general. In this sense, monitoring of the standard of living in general, as well as according to individual components and indicators gains crucial importance for establishing the real state in comparison with the thresholds, for identifying the threats and justifying the strategic guidelines for medium and long-term development scenarios.

**Comparative Analysis of the Living Standards in Ukraine and Georgia.**

Using these methods of measuring threshold values, we calculate the vector of the threshold values of the suggested indicators and the valuation coefficients taking into account the experience of the economically developed countries. The advantage is given to the methods of functional dependencies, macroeconomic models, and stochastic process (see Table 5.10).

**Table 5.10**  
**Vector of Threshold Values of the Indicators of Standard of Living\***

<i>Indicators</i>	<i>Lower threshold</i>	<i>Lower opt.</i>	<i>Upper opt.</i>	<i>Upper threshold</i>	<i>Norm. Coefficient</i>
- labour use level;	0.8	0.9	1.0	1.0	<b>1.0</b>
- compensation of employees in output;	0.2	0.26	0.32	0.382	<b>0.382</b>
- GDP created by shadow employment and wages;	15.0	8.0	5.0	3.0	<b>45.0</b>
- shadow employment to total employment;	20.0	15.0	10.0	7.0	<b>37.0</b>
- expenditure on education to output, %;	2.5	2.8	3.9	6.0	<b>6.0</b>
- healthcare expenditure to output, %;	4.0	4.9	6.3	7.4	<b>7.4</b>
- the ratio of average wages to a living wage;	3.0	4.0	6.0	7.0	<b>7.0</b>
- wage share in the structure of income, %;	40.0	50.0	60.0	70.0	<b>70.0</b>
- pension expenditure to output, %;	7.5	6.0	4.0	3.5	<b>8.5</b>
- pension fund deficit to output, %.	1.5	1.0	0.5	0.25	<b>3.0</b>
<b>Integral threshold values</b>	<b>0.46188</b>	<b>0.62133</b>	<b>0.79713</b>	<b>0.9073</b>	

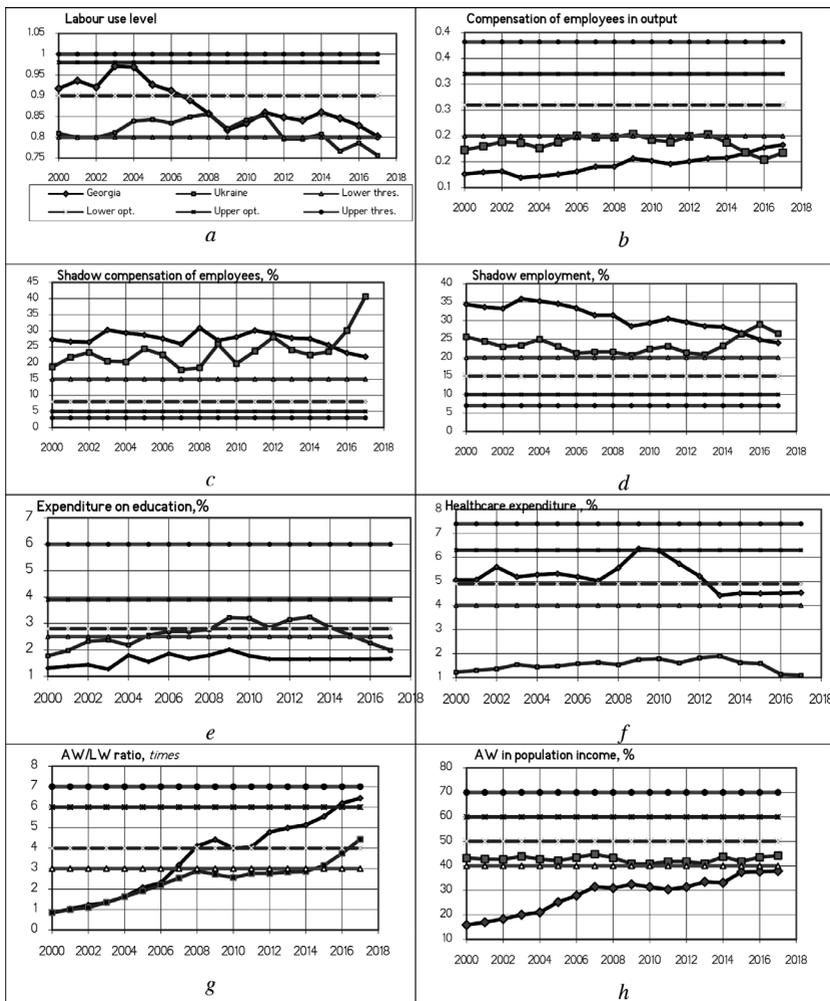
\* Source: *Authors' calculations*

Fig. 4.2 reflects the dynamics of the determined indicators of the standard of living for Ukraine and Georgia for 2000-2017 compared with the corresponding threshold values. This comparison makes it possible to identify

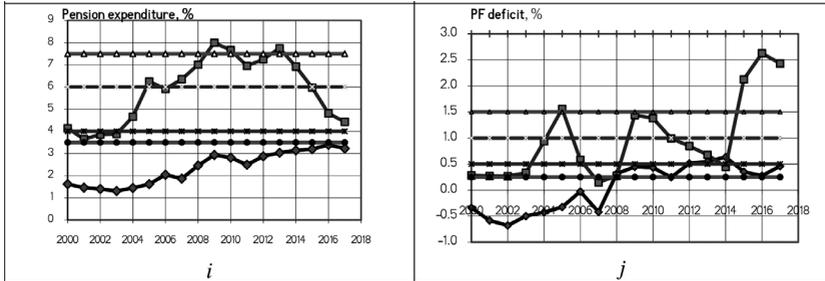
**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

the status of individual indicators that threaten the safety of the standard of living and determine the required regulatory actions.

**Figure 5.2: Dynamics of the Indicators of the Standard of Living in Ukraine and Georgia**



**CHAPTER 5. SOCIAL ASPECTS OF INNOVATIVE DEVELOPMENT  
OF UKRAINE AND GEORGIA**



Georgia has always surpassed Ukraine by the level of labour use and even had the best performance in 2000-2006 with a gradual decrease to the lower threshold. In Ukraine since 2012, this figure has fallen below the lower threshold and is particularly strong after 2014, reflecting a real threat.

Ukraine has outstripped Georgia by the wage and salary share in the output which determines the average nominal wage, till 2015, but then the situation has changed, and both countries are currently in the critical area below the lower threshold.

Despite the anti-corruption reforms in Georgia held in 2004-2013, shadow wages and shadow employment have still been substantial, even larger than in Ukraine until 2015, and then the situation has changed. Both countries are in the critical area – below the lower threshold – according to this indicator. According to the model forecast in 2017, the level of shadow wages (shadow undeclared ‘envelope’ wages is the internal share of the official GDP created by the shadow economy taking into account the consumption multiplier) is 21.9% in Georgia, 40.6% in Ukraine, and shadow employment is 23.9 and 26.5% respectively.

Georgia has always been in the critical area – below the lower threshold – by the expenditure on education which indicates a very insufficient financing of education in the country. Ukraine has got considerably better indicators in terms of the indicator: in 2006-2014, the country was in the optimal zone which corresponds to the level of the economically developed

countries of the world, and only in the last two years (2016-2017) it had negative dynamics and appeared to be in the critical zone.

The situation with the healthcare expenditure is quite the opposite: Georgia has undoubtedly the best indicators. They were in the optimal zone in 2000-2014, but has somewhat deteriorated in recent years. Ukraine has had a low level of health spending throughout the analysed period: it was constantly in the critical area at the level of underdeveloped African countries which is an important cause of population decline and emigration.

Taking into account the ratio of average wages to a living wage, by 2008 Georgia has already reached the EU standards (4 times higher) and has continued the indicator increase up to 6.5 times in 2017. On the contrary, by the end of 2015, Ukraine has come closer to the lower threshold of the EU countries and only in 2017 reached the value 4.4 times. However, both in Georgia and in Ukraine, wages / salaries and living wage are significantly lowered in terms of output.

The share of wages in the income of the population of Ukraine is roughly constant: it is closer to the lower threshold, indicating both low absolute compensation of employees and shadow employment. In Georgia, this indicator is in the critical area – below the lower threshold, but with a positive dynamics of approaching the lower threshold, indicating a gradual increase in wages and a reduction of shadow employment.

Until 2008, the pension expenditure to output in Georgia has been too low that indicates substantial reserves of its increase, if the country targets economically developed countries. In Ukraine, this indicator in some years was in a critical or pre-critical zone – below the lower threshold or between the lower threshold and optimal values. Over the past 4 years, it has approached the upper optimal value and nowadays corresponds to the level of economically developed countries. Thus, the optimisation of citizens' pensions can be achieved by increasing the output and assuring a fairer distribution of the pension fund, but not by increasing the share of pension expenditure in the output.

If until 2014 the PF deficit in Ukraine was within acceptable limits, in the last 3 years it has reached critical values due to the low revenues of the PF due to low wages, decline in production and labour migration. Georgia does not have a pension fund, and pensions are paid from the state budget. Before 2008, there was a 20% social tax, but according to the changes that came into force on profits and the rate of this new tax was reduced to 25%. Therefore, for proper comparison with Ukraine, we have modelled the virtual pension fund of Georgia, where the social tax (which does not exist in Georgia since 2008) was defined as follows:

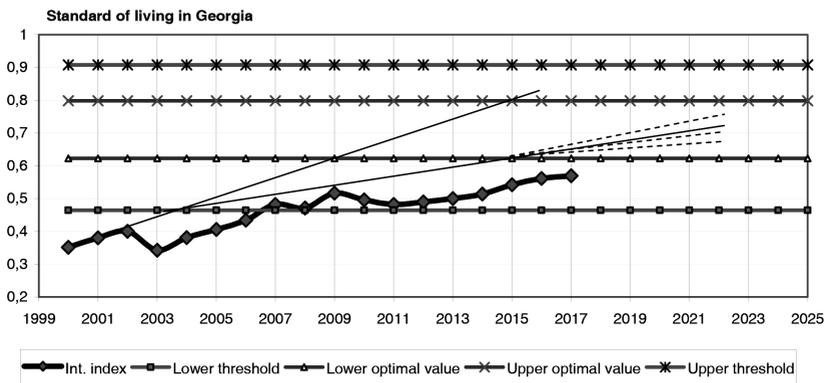
$$SSC = \frac{20}{20+12} \cdot 25 = 0.625 \cdot 25 = 15.625 \%, \quad (19)$$

while the revenues and expenditures of the virtual pension fund were calculated according [eq. (13)]. As a result of calculations, the deficit of the virtual PF of Georgia can still be increased (to the level of economically developed countries).

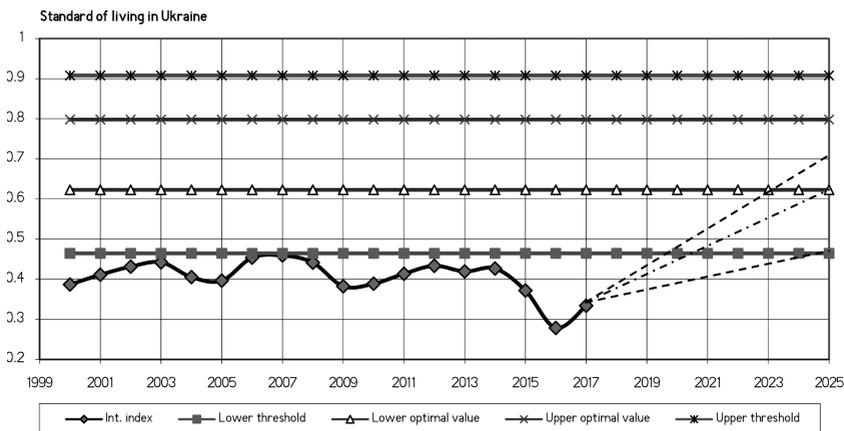
Each indicator in a particular period may increase or decrease, so it is not enough to analyse individual indices or development indicators. This does not give a complete picture of the standard of living in general. For an unambiguous measuring of the living standard of the population, we will analytically determine the integral index which will ensure the methodological unity of all indicators.

Simultaneous valuation of the indicators and their threshold values with a single normalisation coefficient allows us to compare the dynamics of the integral index with integral threshold values on one scale, that is, to identify the state of living standards of the population of Georgia (see Fig. 4.3) and Ukraine (see Fig.4.4).

**Figure 5.3: Dynamics of the Standard of Living in Georgia**  
*(dotted lines reflect strategic development scenarios)*



**Figure 5.4: Dynamics of the Standard of Living in Ukraine**  
*(dotted lines reflect strategic development scenarios)*



As the calculations show, since 2007 the living standard in Georgia has crossed the lower threshold. Nowadays it has a positive dynamics and is approaching the lower optimal value of economically developed EU countries.

It is notable that the analysed period can be clearly divided into two stages: (1) 2003-2009 with the development angle of about  $34^\circ$  and (2) 2011-2017 with the development angle of about  $14^\circ$  which is almost 2.5 times slower. This can be explained by the effectiveness of the liberal reforms in the social and economic spheres in the first period, as a result of which the Georgian economy has experienced a rapid rise, reflected in international indices, reports and ratings, as well as in the dynamics of the standard of living and our calculations confirm it.

Out of ten indicators of the standard of living in Georgia, *five* are below the lower threshold, thus, they are alarming and need attention: compensation of employees in output; shadow GDP created by the shadow economy; shadow employment to total employment; expenditure on education; wage share in the structure of income of the population.

The dynamics of the deviations of the normalised values of the indicators from their average optimal values reflects the importance of threats and development disproportionality most clearly: the largest deviations determine the greatest threat (see Fig. 5.5).

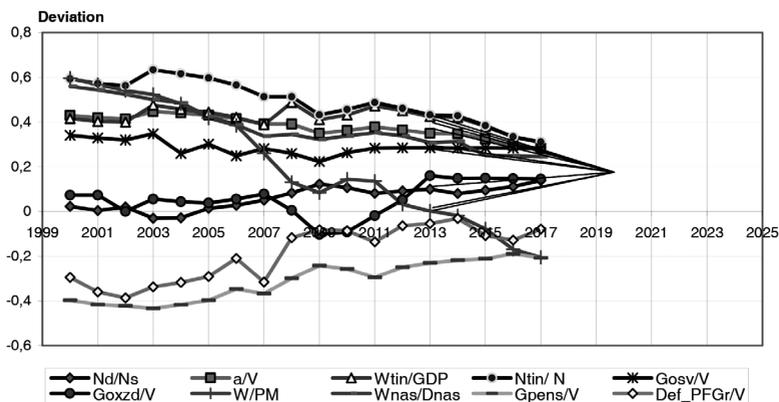
Unfortunately, unlike Georgia, the standard of living in Ukraine since 2000 has never risen above the lower threshold, indicating a systemic crisis in the social sphere. This situation is due to the critical level of the majority of key indicators.

Out of ten indicators, seven are in the critical area (below the lower threshold), two are in the pre-crisis zone (between the lower threshold and the lower optimal value), one – pension expenditure to output – in the optimal area. It should be emphasised that although the amount of pension expenditures corresponds to the existing output, in absolute terms the output is too small to provide a decent level of pensions for Ukrainian citizens.

Thus, the main threats to a decent standard of living in Ukraine are reflected in the indicators: labour use level, compensation of employees in output, GDP created by shadow economy; shadow employment to total em-

ployment; expenditure on education; healthcare expenditure to output; PF deficit to output.

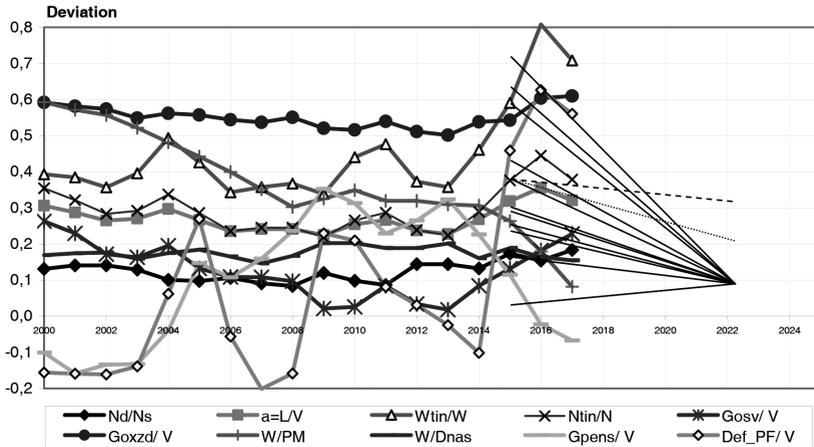
**Figure 5.5: Dynamics of Deviation of Current Values of Indicators from Their Average Optimal Values for Georgia**



The most critical ones include the following: *compensation of employees in output* (indicates very low nominal wages), *shadow wages* (shows a high share of ‘envelope’ wages), *healthcare expenditure* (reveals catastrophically low funding for healthcare) and the dynamics of deviations clearly demonstrates that (see Fig.5.6).

It should be highlighted that the use of realistic and optimistic strategic development scenarios preserves the disproportionality to varying degrees (see the trajectory of the compensation of employees in output illustrated in Fig.5.6), and full implementation of the agenda for sustainable development with regard to the standard of living component completely eliminates this disproportionality. Apart from that, in a realistic scenario, the PF deficit fell, but it remains challenge to the country; according to the optimistic scenario, the surplus of the PF starts in 2022, and for sustainable development it appears earlier, in 2020.

**Figure 5.6: Dynamics of Deviation of Current Values of Indicators from Their Average Optimal Values for Ukraine**



Thus, the indicators of the standard of living in Ukraine (all but one) do not correspond (even in relative terms) to European standards in the first place; furthermore, they have had virtually no positive dynamics for a long time. Therefore, it is not surprising that in such conditions more and more active, motivated, highly skilled citizens have lost hope for the improvement and choose to emigrate from Ukraine to other countries.

If this trend remains unchanged, it will lead to a sharp decline in working-age population, and, accordingly, to relevant drastic decline in social contributions, increase in the Pension Fund deficit, further decline in the standard of living and a complete loss of the economic growth potential of Ukraine.

**Scientific Substantiation of the Strategic Targets for the Standard of the Living.** The main objective of social policy, as well as its components, is the achievement of sustainable development. Strategic vision of sustainable development, first of all, involves defining at what distance from the desired

level development are the current indicators of the standard of living. Namely, it is desirable to determine the starting point for each component of the standard of living, and then – to justify strategic benchmarks for achieving the desired level of indicators. The average value between the lower and upper optimal values – a *homeostatic plateau*<sup>31</sup> – within which there is a negative feedback and the best conditions for the system, is the criterion for achieving sustainable development.

Hence, let's define development scenarios:

**For Georgia** (see Fig.5.3):

*realistic* (inertial) assumptions – reaching the lower optimal value;

*optimistic* assumptions – reaching 0.5 of the average optimal value;

*sustainable development* assumptions – reaching the average optimal value.

**For Ukraine** (see Fig.5.4):

*realistic* (inertial) assumptions – reaching the lower threshold value;

*optimistic* assumptions – reaching the lower optimal value;

*sustainable development* assumptions – reaching the average optimal value.

The rationale for strategic guidelines implies solving the issue of sequential decomposition of integral indices, i.e., synthesising the necessary values of the components and their indicators for finding the integral index in the specified limits by solving the inverse problem. Solving this issue for each component of the standard of living, when known (or given) its desired value, allows determining the required values of the components and their indicators that meet the defined objectives for each year throughout the forecast

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31 Kharazishvili Yu.M., Shevchenko A.I. Kontseptsiiia modernizatsii staloho rozvytku zaliznychnoho transportu z pozytsii ekonomichnoi bezpeky [Concept of Sustainable Development Modernisation for Railway Transport from the Standpoint of Economic Security]. *Bankivska sprava* [Banking], 2017, no. 2(143), pp. 27-43. [in Ukrainian]

period, while taking into account the sensitivity of components or indicators, weight coefficients and adaptive regulation methods of the control theory<sup>32</sup>.

If one uses the appropriate equations for calculating the indicators of each component of the standard of living and the normalisation formulas in the reverse order, s/he can obtain strategic benchmarks for key macro-indicators (see Tables 4.11, 4.12), which, along with the strategic values of the indicators, are the ultimate goal of regulation required in order to achieve the anticipated standard of living for the population of Georgia and Ukraine (see Tables 5.13, 5.13).

**Table 5.11**

**Strategic Values of the Indicators of Standard of Living in Georgia for 2025 According to Sustainable Development Scenarios\***

<b>Indicator</b>	<b>Realistic Scenario</b>	<b>Optimistic Scenario</b>	<b>Sustainable Development</b>
1. Labour use level	0.8320	0.8618	0.94
2. Compensation of employees in output	0.2025	0.2215	0.29
3. GDP created by shadow employment and wages, % of GDP	19.69	17.5	6.5
4. Shadow employment, %	21.42	19.08	17.5
5. Expenditure on education, %	1.927	2.176	3.35
6. Healthcare expenditure, %	4.688	4.847	5.6
7. Ratio of average wages to a living wage, %	6.64	6.83	5
8. Wage share in the structure of income, %	41.04	44.08	55
9. Pension expenditure in output, %	2.89	2.57	3.67
10. PF deficit (-)/ surplus (+) in output, %	0.0	0.49	0.0

\* Source: Authors' calculations

32 Kharazishvili Yu.M., Dron V.Ye. Adaptivnyi pidkhid do vyznachennia stratehichnykh oriientyriv ekonomichnoi bezpeky Ukrainy [Adaptive Approach to Defining Strategic Guidelines for Economic Security of Ukraine]. *Ekonomika Ukrainy* [Economy of Ukraine], 2014, no. 5, pp. 28-45. [in Ukrainian]

**Table 5.12**

**Strategic Values of the Indicators of Standard of Living in Ukraine for  
2025 According to Sustainable Development Scenarios\***

<b>Indicator</b>	<b>Realistic Scenario</b>	<b>Optimistic Scenario</b>	<b>Sustainable Development</b>
1. Labour use level	0.7917	0.8569	0.94
2. Compensation of employees in output	0.1972	0.2464	0.29
3. GDP created by shadow employment and wages, % of GDP	33.62	23.41	6.45
4. Shadow employment, %	22.37	16.27	12.5
5. Expenditure on education, %	2.58	3.50	3.35
6. Healthcare expenditure, %	2.38	3.93	5.6
7. Ratio of average wages to a living wage, %	4.79	5.44	5
8. Wage share in the structure of income, %	46.69	51.32	55
9. Pension expenditure in output, %	3.81	2.77	5.0
10. PF deficit (-)/ surplus (+) in output, %	-0.55	0.99	2.04

\* Source: *Authors' calculations*

**Table 5.13**

**Change the Most Important Macro-level Indicators in Georgia for  
2025 According to Sustainable Development Scenarios\***

<b>Indicator</b>	<b>Realistic Scenario</b>	<b>Optimistic Scenario</b>	<b>Sustainable Development</b>
Gross domestic product (nom.), <i>billion GEL</i>	94.53	137.07	179.6
Optimal demand for labour, <i>million people</i>	1.7472	1.8098	1.9470
Nominal wage, <i>GEL/month</i>	2,194.7	3,361.5	5,286.5
Shadow wage, <i>GEL/month</i>	2,551.6	3,692.1	2,742.4
Shadow employment <i>million people</i>	0.2357	0.2098	0.1375
Expenditure on education, <i>billion GEL</i>	3.01	4.93	9.95
Expenditure on healthcare, <i>billion GEL</i>	7.33	10.98	16.62
Living wage, <i>GEL/month</i>	330.7	491.9	1,057.3
Minimum wage, <i>GEL/month</i>	1,097.4	1,680.7	2,643.2
Pension expenditure, <i>billion GEL</i>	4.53	5.82	10.9
Average monthly pension, <i>GEL</i>	388.8	500.1	936.6
PF deficit (-)/ surplus (+) ( <i>billion GEL</i> )	0.0	1.11	0.0

\* Source: *Authors' calculations*

Table 5.14

**Change the Most Important Macro-level Indicators in Ukraine for  
2025 According to Sustainable Development Scenarios\***

<b>Indicator</b>	<b>Realistic Scenario</b>	<b>Optimistic Scenario</b>	<b>Sustainable Development</b>
Gross domestic product (nom.), <i>billion UAH</i>	6,174.4	11,731.3	22,960.0
Optimal demand for labour, <i>million people</i>	15.65	17.05	18.79
Nominal wage, <i>UAH/ month</i>	20,020.0	43,908.0	92,209.0
Shadow wage, <i>UAH/ month</i>	20,667.0	37,609.0	23,570.0
Shadow employment <i>million people</i>	3.2438	2.3591	1.8125
Expenditure on education, <i>billion UAH</i>	303.4	782.9	1,465.0
Expenditure on healthcare, <i>billion UAH</i>	280.4	878.9	2,449.2
Living wage, <i>UAH/ month</i>	4,180.8	8,078.3	18,441.8
Minimum wage, <i>UAH/ month</i>	10,010.0	21,954.0	46,104.0
Pension expenditure, <i>billion UAH</i>	448.3	619.6	874.7
PF deficit (-)/ surplus (+) ( <i>billion UAH</i> )	-64.9	221.3	891.3
Average monthly pension, <i>UAH</i>	3,113.4	4,302.8	6,074.1

\* Source: Authors' calculations

Strategic benchmarks for the standard of living defined for each year basing on the sensitivity of the impact of each individual indicator on the integral index, are, in essence, strategic plans for the medium to long-term perspective. The identified strategic benchmarks of the standard of living at the level of indicators are necessary for comparing with the actual values during monitoring, for determining the proximity to the preferred sustainable development indicators and the effectiveness of macroeconomic policy activities.

### Conclusions

1. We define the standard of living as a complex socio-economic category that reflects the level of development of the physical, spiritual and social needs of the population, the degree of their satisfaction available to a person, and conditions for the development and satisfaction of these needs existing

in a society. A high standard of living is the objective and criterion of the effectiveness of socio-economic policy, a prerequisite for human development, an element of social security. The article suggests a list of the indicators of the standard of, taking into account shadow employment and shadow wages, without which the assessment of standard of living is inadequate.

2. Without knowing the boundaries of safe conditions for the economic system functioning, it is impossible to protect its vital interests. Therefore, we substantiated the vectors of the threshold values for each indicator (lower threshold, lower optimal value, upper optimal value, upper threshold), taking into account the experience of economically developed EU countries, which, in fact, gives an opportunity to identify the standard of living of Georgia and Ukraine.

3. The research assessed and identified the standard of living of the population of Georgia and Ukraine according to the author's modern methodology of integral assessment which also revealed the main threats. This allows us to determine how far the standard of living in Georgia and Ukraine is from the sustainable development indicators:

- the integral index of the standard of living in Georgia in 2009 exceeded the critical value of the lower threshold, it has positive dynamics and approaches the lower optimal value of the EU countries. However, out of ten indicators of the standard of living in Georgia, *five* are below the lower threshold, thus, they pose a threat to a decent standard of living;

- for the last 17 years the integral index of the standard of living in Ukraine has been below the critical value (lower threshold). This demonstrates a consistently low level of living which got even worse over the last three years. This poses a threat to national security from the side of society. The given situation is due to the unsatisfactory level of the vast majority of the indicators of standard of living. Out of ten indicators, *nine* pose a threat to a decent standard of living.

4. The article advocates three strategic development scenarios aiming to raise the standard of living of the population of Georgia and Ukraine

by 2025: realistic, optimistic and sustainable development scenarios. They scientifically substantiate strategic benchmarks with the use of adaptive regulation methods of the control theory through the definition of target benchmarks and decomposition of integral indexes. The values of the standard of living indicators and relevant macro-indicators that provide the desired development are the ultimate result of strategic planning.

5. The identified strategic benchmarks for sustainable development at the level of indicators are, in their essence, a strategy for raising the standard of living of the population of Georgia and Ukraine. They are necessary for comparing with the actual values during monitoring, for determining the proximity to the preferred sustainable development indicators and the effectiveness of macroeconomic policy activities. It is evidenced that the use of realistic and optimistic strategic development scenarios preserves the disproportionality to varying degrees, and only full implementation of the agenda for sustainable development with regard to the standard of living component completely eliminates this disproportionality. Thus, the sustainable development scenario allows reaching the average optimal values of the indicators (sustainable development criteria): an increase in the share of wages in output and, consequently, a significant increase in wages and a decrease in the shadow economy that solves the problem of the standard of living and the budget deficit of Georgia and Ukraine.

6. Practical implementation of the noted scenarios of the standard of living in Ukraine is impossible without a significant reduction of corruption and shadow economy. Effective system reforms, including the transfer of executive power to artificial intelligence (smart robots), are still an absolute must; they are required to overcome corruption at all levels of power and change the negative trends in socio-economic policies. This is the only way can we stop the destruction of the middle class, total emigration, and depopulation, restore faith and confidence in state power, assure economic growth and increase the standard of living.

## REFERENCES:

- Grishnova O.A.** **Liudskiy rozvytok:** Navch. posibn. [Human Development. Study Guide]. Kyiv: Kyiv National Economic University, 2006, 308 p. [in Ukrainian]
- Koval O.P.** Perspektyvy vprovadzhennia zahalnooboviazkovoï nakopychualnoi pensiinoï systemy v Ukraini: vplyv na ekonomichnu bezpeku [Prospects for the Introduction of a Compulsory Accumulative Pension System in Ukraine: Impact on Economic Security]. Monohrafiia [Monograph]. Kyiv: NISS, 2012, 240 p. [in Ukrainian]
- Kharazishvili Yu.M., Dron Ye.V.** Problemy intehralnogo otsiniuvannia rivnia ekonomichnoi bezpeky derzhavy [Problems of Integral Assessment of the Level of Economic Security of the State]. *Bankivska sprava* [Banking], 2015, no. 1 (133), pp. 3–21. [in Ukrainian]
- Kharazishvili Yu.M., Shevchenko A.I.** Kontseptsiiia modernizatsii staloho rozvytku zaliznychnoho transportu z pozytsii ekonomichnoi bezpeky [Concept of Sustainable Development Modernisation for Railway Transport from the Standpoint of Economic Security]. *Bankivska sprava* [Banking], 2017, no. 2(143), pp. 27-43. [in Ukrainian]
- Kharazishvili Yu.M., Dron V.Ye.** Adaptivnyi pidkhid do vyznachennia stratehichnykh oriientyryv ekonomichnoi bezpeky Ukrainy [Adaptive Approach to Defining Strategic Guidelines for Economic Security of Ukraine]. *Ekonomika Ukrainy* [Economy of Ukraine], 2014, no. 5, pp. 28-45 [in Ukrainian]
- Kharazishvili Yu.M.** Prohnozuvannia indykatoriv, porohovykh znachen ta rivnia ekonomichnoi bezpeky Ukrainy u serednostrokovii perspektyvi [Forecast of Indicators, Threshold Values and Economic Security Level of Ukraine: Medium-Term Prospects]; analit. dop. [Analytical Report]. Kyiv: NISD, 2014, 117 p. [in Ukrainian]
- Kharazishvili Yu.M.** Svitlo ta tin ekonomiky Ukrainy: rezervy zrostannia ta modernizatsii [Light and Shadow of the Economy of Ukraine: Potential for Increase and Modernisation]. *Ekonomika Ukrainy* [Economy of Ukraine], 2017, no. 4(665), pp. 22-45. [in Ukrainian]
- Kharazishvili Yu.** Klasychna model funktsii skupnoi propozytsii v konteksti keinsianskoï teorii [Classical Model of the Aggregate Supply Function of in the Context of

the Keynesian Theory]. *Statystyka Ukrainy* [Statistics of Ukraine], 2006, no.1, pp. 42–48. [in Ukrainian]

**Kharazishvili Yu.M.** Tinova zainiatist ta tinova oplata pratsi v Ukraini: otsinky ta prohnozy [Shadow Employment and Shadow Wages in Ukraine: Estimates and Projections]. *Stratehiia rozvytku Ukrainy (ekonomika, sotsiologhiia, pravo): nauk. zhurn.* [Development Strategy of Ukraine (Economics, Sociology, Law): Scientific Journal] – Kyiv: NAU, 2011, no. 4, vol. 1, pp. 171–182. [in Ukrainian]

**Mishchuk H., Bilan Y., Dzyhar T.** Human Capital Factors and Remuneration: Analysis of Relations, Modelling of Influence // *Business: Theory and Practice*, 2017, № 18, p. 208 – 214. [in English]

**Mishchuk H., Grishnova O.** (2015). Empirical study of the comfort of living and working environment – Ukraine and Europe: comparative assessment, in *Journal of International Studies*, 8 (1), 67 – 80. [in English]

**Shapoval M., Viter V.** Bidnist – problema planetarnoho masshtabu [Poverty is a Problem of Global Scale]. *Uriadovyi kurier* [Governmental Courier], 2007, 11 April, p.6 [in Ukrainian];

**Tarasevich L. S., Galperin V. M., Grebennikov P. I., Leusskii A. I.** *Makroekonomika* [Macroeconomics]. Ucheb. obshch. red. Tarasevicha L. S. Izd. 3–e, pererab. i dop. [Prepared under the general editorship of Tarasevych L. S., 3<sup>rd</sup> ed., revised and corrected by the author]. St. Petersburg: Publishing House SPbGUEF, 1999, p. 55. [in Russian]

**Zavora T.M.** Pidvyshchennia sotsialnykh standartiv u konteksti zabezpechennia natsionalnoi bezpeky derzhavy u sotsialnii sferi [Improving Social Standards in the Context of Ensuring National Security of the State in Social Sphere] [online]. Poltava National Technical University named after Yurii Kondratiuk. – Retrieved from: [http://www.rusnauka.com/30\\_OINXXI\\_2013/Economics/13\\_146887.doc.htm](http://www.rusnauka.com/30_OINXXI_2013/Economics/13_146887.doc.htm) [in Ukrainian]

## CHAPTER 6.

### FINANCIAL DETERMINANTS OF INNOVATIVE DEVELOPMENT OF COUNTRIES UNDER GLOBALIZATION

#### **6.1. The key role of innovative investment in increasing the competitiveness of national economies**

The financial determinants of innovation development of all the subjects of the global economy play a key role in providing their high competitiveness in all sectors. This position has become an important starting point for most countries in the search of the most effective options for the formation and development of national innovation systems. Those countries include Georgia and Ukraine that became members of the Free Trade Association with the European Union. It is quite understandable that the position of researchers and practitioners is to enhance the role of the innovation financing system in the general model of managing the global competitiveness of national economies. Several conclusions of specialists in this field will be provided in relation to that.

First of all, let us admit the position of the well-known authors of the project “Improving Strategies, Policies and Regulation of Innovations in Ukraine”, implemented with the support of the European Union. The authors of the section “Financing Innovations” K. Khalme and I. Bulkin emphasize: “The main motivation of governments is to ensure the availability of financing for innovative companies, given their crucial role in building up and innovating modern economic systems.”<sup>1</sup> The authors of the national report “Innovative Ukraine-2020” note: “The system of financial support for innovation should consider macroeconomic, political and other factors, includ-

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1 Improving Strategies, Policies and Regulation of Innovations in Ukraine. European Aid/127694/C/SER/UA. – K.: Fenix, 2011. – P. 19.[in English]

ing the state and type of financial system in each country. High investment risks of invested capital loss, which are natural for innovation activities, create barriers to private investment in this area.”<sup>2</sup> Finally, the latest report of the Committee on Science and Technology Policy of OECD on March 16, 2017 emphasizes that in modern conditions, innovation policies, especially in the financial sphere, play a critical role in promoting domestic growth.<sup>3</sup> All the above positions on the importance of financing innovative activities are based on the increasing role of innovative factors in increasing the global competitiveness of national economies, as Table 6.1 shows.

**Table 6.1**

**Correlation between The Global Innovation Index (GII),  
ICT Development Index (IDI) and the indicators of the  
development of the national economy  
in 2017**

<b>Indicators</b>	<b>Correlation coefficient</b>	
	<b>GII</b>	<b>IDI</b>
GDP per capita	0.8902	0.8012
Human Development Index	0.9513	0.9417
Global Competitiveness Index	0.6814	0.8187
Technological Development Index	0.9402	0.9012
Economic Efficiency Index	0.9217	0.8418

Source: authors’ calculations based on The World Bank Data retrieved from: <http://data.worldbank.org>; UNDP. Human Development Report 2016, retrieved from: [http://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf); Global Competitiveness Report, retrieved from: [http://www.weforum.org/does/WTF\\_GlobalCompetitivenessReport\\_2016-17.pdf](http://www.weforum.org/does/WTF_GlobalCompetitivenessReport_2016-17.pdf); The Global Innovation Index, retrieved from: <http://www.globalinnovationindex.org>. – 11.12.2017; ITU. ICT development Index 2016, retrieved from: <http://www.itu.int/net4/ITU-D/idi/2016/index.html> - 23.12.2017; Global metric for the environments, retrieved from: <http://epi.yale.edu/>

- 2 Innovation Ukraine-2020: National Paper National Academy of Science of Ukraine. – K., 2015. – P. 209 [in Ukrainian].
- 3 Making Innovation Benefit All: Policies for Inclusive Growth. – Paris: OECD, p. 9.[in English]

As can be seen from the above table, the high correlation coefficients between the innovative and informational development of society prove the key role of innovations in increasing key indicators of the competitiveness of national economies. To the greatest extent, this refers to the indices of human and technological development, the correlation coefficients for which exceed 0.94. However, for the other indicators both coefficients also have a high level in the range of 0.68-0.89. Considering that, we should agree with the position of the authors of the report “Innovative Ukraine-2020” mentioned above, who note that “innovation is the defining characteristic of modern scientific, technical, manufacturing, socio-economic and all social processes. The future of Ukraine depends on the ability to use innovative mechanisms: whether it will move towards becoming one of the developed countries, or will remain a stagnant country out of scientific, technical and social progress. This is related to the general patterns of social development, according to which the world is transitioning from a mostly manufacturing to an innovative type of development. Those countries, which have understood this in time and built economic systems in accordance with this historical imperative, have success, respect and glory. Countries that failed to do that have problems, failures and despair. Innovation is not only the key to dynamic development, prosperity and personal success, but also a way to provide the sovereignty of the country and its competitiveness in the modern super-complex world.”<sup>4</sup>

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4 Innovation Ukraine-2020, p. 5.

## 6.2. European practices of financing innovation: “Horizon 2020” and localization system

Scopes, directions, institutions and other aspects of financing innovative activities are determined mainly by the features of national and regional innovation systems. With consideration of that, analysis of the experience of financing innovations in the European Union deserves attention for Georgia and Ukraine in the context of their European integration development vector. First of all, we should admit the key role of the program tools for financing innovation in the European Union. This is the framework program “Horizon 2020” for research and innovations of the EU, which was launched in 2014. It includes three main components:

- Framework Programme for Research and Technical Development;
- Competitiveness and Innovation Framework Programme;
- European Institute of Innovation and Technologies.

The program “Horizon 2020” for the period of 2014-2020 allocates the main funding in three priority areas: frontier science, industrial leadership and social challenges. These priorities correspond to the objectives of the “Europe 2020” program and are determined by an innovative union. The main financial parameters of the 2020 program are presented in Table 6.2.

Analysis of the data in the table allows to make, a number of important conclusions. As first view, the humanitarian sphere occupies a leading role in the volume of financing - €29,7 billion (37,8%). It is due to the fact that the solution of social problems is always a priority for innovative activities in the EU. However, if a deeper look is made at the funding items, it becomes clear, that the positions 3.3 (energetics), 3.4 (transport), 3.5 (efficient use of resources and raw materials) are obviously technical. Therefore, they can be attributed bot to the section “Industrial Leadership”, and to the section “Frontier Science”. Secondly, the volume of innovation financing

**Table 6.2**

**Budget of program “Horizon 2020” (2014-2020), euro billion**

<b>№</b>	<b>Sphere of financing</b>	<b>Amount</b>	<b>%</b>
1	Frontier science	24,4	31,0
	including:		
1.1	Advanced research by leading groups of the European Research Council	13,1	
1.2	Joint research of technologies of the nearest and remote future	2,7	
1.3	Activities within the Maria Skłodowska-Curie Foundation program in the context of creating opportunities for career growth	6,16	
1.4	Development of a research infrastructure to provide access to world-class centers	2,5	
2	Industrial leadership	17,0	21,6
	including:		
2.1	Creation of new industrial technologies: information technologies and communication technologies, nanotechnologies, new materials, industrial technologies, space	13,56	
2.2	Access to risk financing (use of private, credit financing and venture capital)	2,84	
2.3	Financing of innovations of small and mid-sized business	0,62	
3	Social challenges	29,7	37,8
	including:		
3.1	Healthcare, demographic changes and welfare	7,47	
3.2	Food security, sustainable agriculture and forestry, investigation of inland water resources and bioeconomics	3,85	
3.3	Safe, clean and efficient	5,93	
3.4	Rational, green and integrated transport	6,34	
3.5	Climatic actions, natural environment, efficient use of resources and raw materials	3,08	
3.6	Inclusive, innovative and reflective communities	1,31	
3.7	Community safety	1,7	
4	European Institute of Innovation & Technology	2,7	3,4
5	Euroatom (2014-2018)	1,6	2,8
6	Other spheres	3,2	3,5
	<b>Total</b>	<b>78,6</b>	<b>100</b>

Source: The Framework Programme for Research and Innovation. – Retrieved from: <http://ec.europa.eu/programmes/horizon2020/eh/what-horizon-2020>. [in English]

through regional investment funds (unincorporated sector), which average annual size is €11,2 billion, is impressive. Thirdly, financing of innovation

activities within the Horizon-2020 program allows participation in contests for grants not only for large research teams, but also for small groups and even for individual talented specialists (1.3 - the Maria Sklodowska-Curie Fund). This is related to the fact that the concept of the Horizon-2020 program is to increase the level of excellence of the scientific base and the stable flow of world-class research as the basic conditions for Europe's long-term competitiveness with support of promising ideas, development of talents in Europe, providing scientists with access to the priority items of the research infrastructure. All this makes Europe a very attractive region for the most talented researchers from other countries. This is fully applicable to Georgia and Ukraine, as thousands of representatives from these countries make successful scientific careers in the EU. Fourth, funding under the Horizon-2020 program is aimed not only on research in specific areas listed in Table 2, but also on creation of the world's best conditions for innovation through the development of research infrastructure and access to the world-class centers (item 1.4), risk financing (risk financing (item 2.2), inclusive, innovative and reflective communities (item 3.6). Fifth, it is important to emphasize the special financing in innovation projects for small and mid-sized businesses (item 2.3), which have significant potential in this area. In this regard, the Horizon-2020 program aims to provide these companies with access to international markets for new products and technologies. The Horizon-2020 program contains institutional arrangements, in particular, the financing of the European Institute of Innovation and Technology (item 3.4) of the Euratom (item 3.5), the European Research Council (pos. 1.1), the Maria Sklodowska-Curie Foundation (item 1.3).

Naturally, the question concerning the use of the European experience of program financing of innovative activities in Georgia and Ukraine arises. What perspectives can be outlined here, taking into account the national limitations of our countries, which cannot conduct innovation activities in more

than fifteen major directions indicated in Table 2? Our recommendations are as follows. First, each country should correlate national priorities of innovative financing with European ones, which will be done in the further presentation. Second, it is necessary to consider the structure of the program Horizon-2020 and adapt it to national peculiarities (sectoral, institutional, small and medium business). Third, it is necessary to intensify the popularization of the Horizon-2020 program among researchers of Georgia and Ukraine to facilitating their participation in various European projects. Fourth, it is necessary to include to the curriculum the study of various disciplines by students, as well as postgraduate education, innovation issues in the context of the framework program Horizon-2020. At the Vadim Getman Kyiv National Economic University, for example, the provisions of this program are studied within the disciplines: “International Innovation Management”, “European Integration Policy” and others.

Of no lower interest is the experience of localization of innovation activities in the EU countries and the consideration of this factor in the financing of innovation. This approach is based on the evolution of innovative models, when at the beginning of the 21st century, the diversification of innovative development occurred on the basis of the emergence of agglomeration structures: clusters, technology parks, business incubators and technopolis<sup>5</sup>. In this regard, the European Union is implementing a regional grouping of innovative development in accordance with the indicators below.

As a result of consistent calculations of these indicators, all 190 EU regions are divided into four groups according to the level of their innovation potential:

- Innovative leaders, or regions, whose integral innovation index is more than 20% higher than the EU average indicator;
- Strong innovators – regions, whose integral innovation index exceeds the average for the EU by 10-20%;

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5 Armstrong HJ. Regional Economics and Policy / H.Armstrong, J.Taylor. – Oxford: Blackwell, 2000. – P. 128. [in English]

- Moderate innovators - regions, whose integral innovation index is lower than the EU average by less than 50%;
- Weak innovators - regions, whose integral innovation index is lower than the EU average by more than 50%.

**Table 6.3**

**Grouping of indicators of regional innovation scoreboard, 2016**

<b>Group</b>	<b>Indicators</b>
1. Factors of innovation development – ENABLERS	1.1. Proportion of the population aged 30-34 with higher education, % 1.2. Government funding (of government and educational institutions) for R&D as % of the region's GDP
2. Innovation activities – FIRM ACTIVITIES	2.1. Private financing of R&D, % of the region's GDP 2.2. Financing of small and medium-sized enterprises (SMEs) with innovation activities not related to science, % of gross revenues of SMEs 2.3. Share of SMEs that carry out innovation activities, % of total number of SMEs 2.4. Innovative assets of SMEs that cooperate with other SMEs, % of total number of SMEs 2.5. Applications for patents per €1 billion of the region's GDP
3. Results of innovation activities – OUTPUTS	3.1. SMEs making product or process innovations, % of total number of SMEs 3.2. SMEs making marketing or organizational innovations, % of total number of SMEs 3.3. The share of employed in knowledge-intensive services, medium- and high-technology sectors of manufacturing industry, % of labor force 3.4. Share of medium- and high-tech exports, % of total exports 3.5. Revenues from sales of innovative products (services) that are new to the firm or to the market, % of the gross revenues of SMEs

Source: Hollanders M. Regional Innovation Scoreboard, 2016. – Brussels: Publications Office of the European Union, 2016. – P. 4-5. [in English]

The idea of calculating and considering in practice innovative financing of regional indicators of innovation efficiency is to increase the horizontal (interregional) competition for obtaining financial resources for research and pilot-plan works. As a result of this competition, funding is usually obtained by the regions of the first two groups. Their composition has been stable over the past decades and includes 36 regions of the EU member states: the

Netherlands, Belgium, Denmark, Northern Germany, Southern Great Britain, Austria, Italy, Southern France, Sweden, Finland, Luxembourg, Norway, Slovenia, and others.<sup>6</sup>

Naturally, the method of innovative localization proposed in the EU, while playing a positive role in increasing the level of competition in the region, also strengthens asymmetries in the innovative development of individual regions, which is noted by many researchers. For example, A. A. Fedirko notes “the existence of permanent asymmetries of levels of regional innovation development that have been stable for a long time between the North and West of Europe on the one hand, and the South and East of the EU, on the other. At the same time, competitive advantages at the level of member countries are crucial for the formation of innovative competitiveness at the regional level: almost all leading regions in the innovative development of the EU and regions with strong positions represent the most competitive member countries of the union. Regions that are moderate innovators, and those that demonstrate the lowest levels of the integral index of innovation development, are mainly concentrated in the EU member states with a low level of innovation”<sup>7</sup>. Thus, the method of innovative localization, widely used in the EU countries, is not only of scientific, but also of practical interest. However, it does not provide an exhaustive answer to the methods of financing innovative activities. Each country, including Georgia and Ukraine, is forced within its national innovation systems to form its own financial mechanisms to support innovation activities.

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6 Hollanders M., p. 14

7 Fedirko A. A. . Key Trends and Problems of Regional Innovation Systems Development in Poland and Ukraine / Central European Review. – 2014. – N 3. – P. 39. [in English]

### 6.3. Innovation financing system

Before determining the most important areas for funding innovative development, it is expedient to resolve the methodological issues of this topic. It is about whether to allocate a special funding subsystem in the overall mechanism for managing innovation activity. Actually, many directive documents have been passed in Ukraine to some extent regulate innovation activity. For example, during the years of independence of Ukraine in 1991-2016. in the field of regulatory and legal support for investment and innovation activities, 565 different documents were passed, including 75 decrees of the President of Ukraine, 147 Laws of Ukraine and 343 Resolutions of the Cabinet of Ministers of Ukraine<sup>8</sup>. Among these documents, it is necessary to note the system-forming role of the two Laws of Ukraine: “On Innovation Activity” No. 40-N of 02.07.2002, and “On Scientific and Technical Activities” of December 05, 1977 No. 1977-XII<sup>9</sup>. Among the decisions of the government, it is necessary to note Order No. 680-r of June 17, 2009 “On approval of the Concept for the Development of the National Innovation System”<sup>10</sup>.

However, the above and other normative acts do not clearly define a system for managing innovation activity, including its financing, although some of them specify its volumes. For example, in the mentioned decision of the Cabinet of Ministers of Ukraine, it is stated that during 2000-2007, the volume of financing for technological innovation from the state budget increased 19 times (from UAH 7.7 million to UAH 144.8 million), and the

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8 Gaidutskyi P.J. Un Forgotten Reforms in Ukraine. – K.: TOV «DKS-Center», 2017. – P. 673 [in Ukrainian].

9 <http://zakon.rada.gov.ua/law/show/40-14;1977-12> [in Ukrainian]

10 Urjadovy courier. – 2009. – № 114. – 27.06 [in Ukrainian]

annual volume of completed scientific and technical works increased 3.4 times (from 1,978.4 million to 6,700.7 million UAH.)<sup>11</sup>. However, the independent role of financing is not covered in these documents. In the Decree on the National Innovation System, the financial component is presented as a part of the innovation infrastructure that includes other components: production and technology, information-analytical, expert-consultative components, etc. In this regard, among specialists, there are various positions regarding the role and composition of financial instruments for managing innovation processes.

Some of Ukrainian specialists pay the main attention to the economic and technological context, i.e. content, rather than the instrumental side of innovation activities. Among these works, there is a monograph by A. S. Shnipko with a very eloquent title “Innovative default of Ukraine”. Analyzing the problems of innovative development in both global and national contexts, including the well-known “Project Russia”, which is widely discussed not only in Russian society, but also in other countries, the author does not distinguish special sections on financing innovation activities<sup>12</sup>. This approach is completely compensated by a detailed study of the potential of innovative development of ten key high-tech sectors of the national economy of Ukraine: aerospace, radio electronic, pharmaceutical, etc. This approach is inherent in a large number of educational publications related to the course “Innovation Management” published both in Ukraine<sup>13</sup> and in Russia<sup>14</sup>. According to the author’s of these publications, the task of innovative managers is to develop a creative atmosphere in the activities of teams, and as for finding sources of financing innovation projects, this is the task of corporate management and government regulation. This position is typi-

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11 The same, p. 2.

12 Shnipko O.S. Innovative Default of Ukraine. – K.: Geneza, 2009. – P. 246-247 [in Ukrainian].

13 Innovation Management. – K: RAMO, 1991. – 112 p. [in Ukrainian]

14 Innovation Management: concepts, strategy and mechanism. – M.: Delo, 2006. – 584 p. [in Russian]

cal for many foreign publications as well. This is partly true for the interesting work “Innovation Management”<sup>15</sup>, authoritative textbook “Innovative Management” by A. Afuan<sup>16</sup>, a well-known monograph by the specialists of the Wharton Business School<sup>17</sup> and others.

At the same time, among foreign works, it is necessary to note works of researchers of financial aspects of innovation activity. In particular, J. Andrew’s monograph contains a deep analysis of the use of the so-called cash curve in providing effective innovation activity, balancing monetary inflows and the advantages of innovative development, modern methods of achieving payback for the development of innovative products<sup>18</sup>.

It is important to note that a number of Ukrainian publications pay particular attention to the financial issues of innovation activities. First of all, this refers to the fundamental monograph of the specialists of the Institute of Economics and Forecasting of the National Academy of Sciences of Ukraine “Strategic Challenges of the 21st Century to the Society and Economy of Ukraine”. Its authors identify a number of areas of financial support for innovation activities<sup>19</sup>:

1) in the field of preferential taxation and lending:

- exemption from taxation for a whole part of the profits, which are spent on investments in own technological development, that is, to new developments and technical re-equipment;

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15 Innovation Management. – Boston: Harvard Business School Publishing Corporation, 2001. – 237 p. [in English]

16 Afuan Allan. Innovation Management: Strategies, Implementation and Profits. Second Edition. – New York: Oxford University Press, 2003. – 390 p. [in English]

17 Davila T. Making Innovation work. How to Manage it, Measure it and Profit from it / T.Davila, M.J.Epstein, H.Shelton. – New Jersey: Wharton School Publishing, 2006. – 320 p. [in English]

18 Andrew J.P. Payback Reaping the Rewards of Innovation / J.P.Andrwe, H.L.Sirkin, J.Butman. – Boston: Harvard Business School Press, 2006. –304 p. [in English]

19 Strategic Challenges of the 21st Century to the Society and Economy of Ukraine. – K.: Fenix, 2007. – P. 508-509 [in Ukrainian].

- Provision of high-end products and services of targeted investment tax credits to investors (first of all to buyers, consumers, but not producers, which did not justify itself in practice), provided they are returned from the profit received from the use of the said products and services;
  - transfer of a part of the profit received from the use of high-tech production to special accounts for the development of this production;
  - exemption (entirely, in part, for a particular) of high-tech industries from paying taxes to the state and / or local budgets in case when this measure counteracts the production crisis, promotes the preservation and creation of new jobs;
  - establishment of high-tech industries, which include research and experimental facilities, such form of taxation of fixed assets, land use, etc., which would allow them to direct additional financial resources to investments in fixed assets, thereby maintaining the competitiveness of their products on the domestic and foreign markets.
- 2) in the field of budgetary subsidies:
- Provision of targeted budgetary subsidies to enterprises that carry out advanced developments and production of high technology products for government orders;
- 3) in the field of customs regulation:
- customs protection of the domestic market for those domestic producers who are able to fill the domestic market for complex products with Ukrainian samples on a qualitatively new basis;
- 4) in the field of amortization policy:
- the use of non-linear (progressive) depreciation, in which a significant part of the value of acquired fixed assets is depreciated in the initial period of their use (but not later than the deadline for the fulfillment of the project task or the time of obsolescence);

5) in the field of pricing:

- establishment and application of rules for the full capitalization of R&D costs, including costs for acquiring licenses, patents, etc. to supply products in addition to public contracts.

As can be seen from stated above, the proposed activities are complex, although not sufficiently systemic by their character. However, their main weakness is that they did not find support in government's decisions even in the experimental version in any priority sectors: aerospace, engineering, pharmaceutical, etc.

More conceptual is provided in the financial section of the national report "Innovative Ukraine-2020"<sup>20</sup>. This document analyzes a more systematic approach to financing innovation. First, the authors of the report clearly distinguish the features of financing innovative activities for its three final stages (the initial, release and expansion of innovative products and services.) Applicable to each stage of innovation, the most optimal sources of funding are proposed: budgetary, corporate, venture, etc. Second, financing of innovation activity has received a constructive development in this report due to an in-depth analysis of the prospects for increasing innovative capacity in priority sectors of the national economy of Ukraine. In this context, we can consider that this document represents a significant step forward in the issue of the formation of a modern model for financing innovation activities in Ukraine.

In this regard, it is important to note the increased attention of the government to the issues of innovative financing, which is related to the activities of the newly established National Council on Science and Technology Development of Ukraine, headed by the Prime Minister of the country. At the first meeting of this council (January 6, 2018), it was proposed to make this year the Year of Science in Ukraine. With it, Prime Minister V.B. Groisman in his introductory speech provided to the researchers the task: "Show me a

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20 Innovation Ukraine-2020, p. 209-235.

qualitatively new model of management and financing of science - and I am ready to meet the needs of Ukrainian science”<sup>21</sup>. At this meeting, the Regulations on the formation of the National Research Fund were adopted. In addition, it is planned to use a qualitatively new tool for financing science in the form of its basic and competitive support: 60% is basic, 40% is competitive. In addition, the task is to develop a cross-government strategy for combining the efforts of science and business with the aim of overcoming the so-called “dead zone”. This zone arises between the field of research and business, when to realize the development potential there are no engineering developments of a high world class. For example, to bring a new mobile phone to the market, it is required to make a lot of small parts: buttons, LEDs, screens, etc., which must be of high quality, reliable, convenient and tightly adhered to each other. Unfortunately, financing of this unobtrusive part of innovation activity is indispensable, and the corresponding mechanisms are lacking in both the science and business sectors. Thus, Ukraine should learn the well-known in the history of innovation activity lesson of J. Atanasov, one of the first creators of computers, that even the greatest ideas are not worth much without a high-quality implementation<sup>22</sup>.

The National Council should play an important role by in building up the country’s scientific potential and preventing the outflow of talented scientists to other countries. In this regard, such data was cited at the meeting. In 1991, about 450,000 people worked in the national science, of which 295,000 were researchers. This human capital was distributed as follows: 17.1% in academic science, 66.8% in industrial science, 16.1% in university and factory science. Until 2015, the number of scientists fell by 4.6 times, and the number specialists working at the enterprises of the experimental

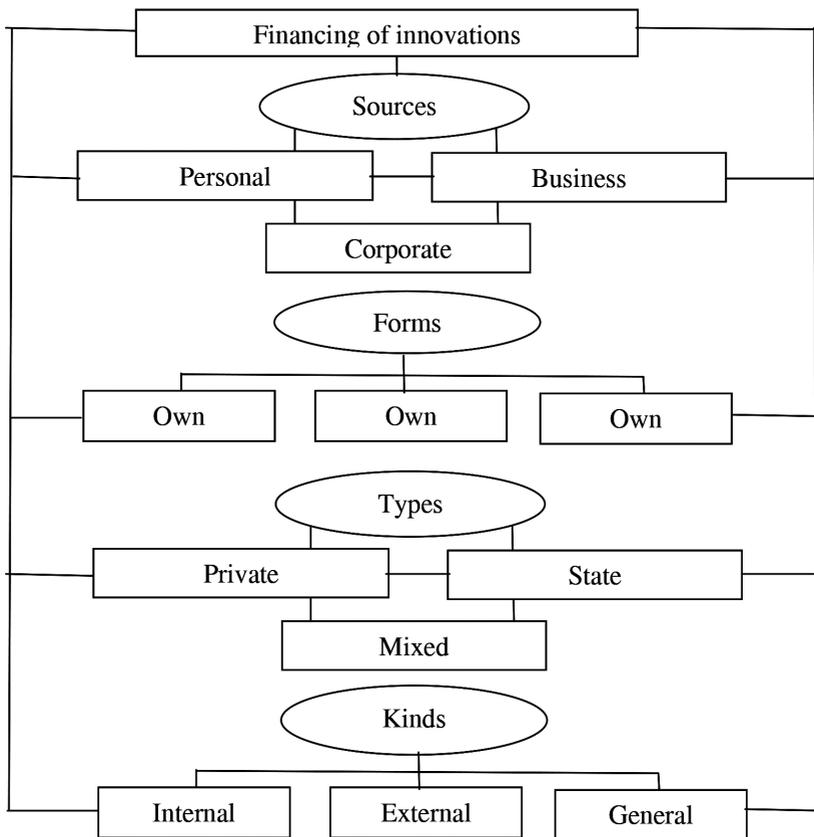
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21 Sutjik L. Give me the Model / Financing of Science. – ZN.UA. – 2018. – N 2. – P. 3 [in Ukrainian]

22 Isaacson Walter. The Innovators. How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution. – New York: Simon & Shuster, 2014. – P. 99. [in English]

production base declined by 23 (!) times. As a result, a chain that unites science and production was completely ruined.

Summarizing the above, it can be concluded that it is extremely urgent to create an integrated system for financing innovations. One of the options for such a system is proposed in Figure 6.1.



**Figure 6.1. Classification system for financing of innovations**

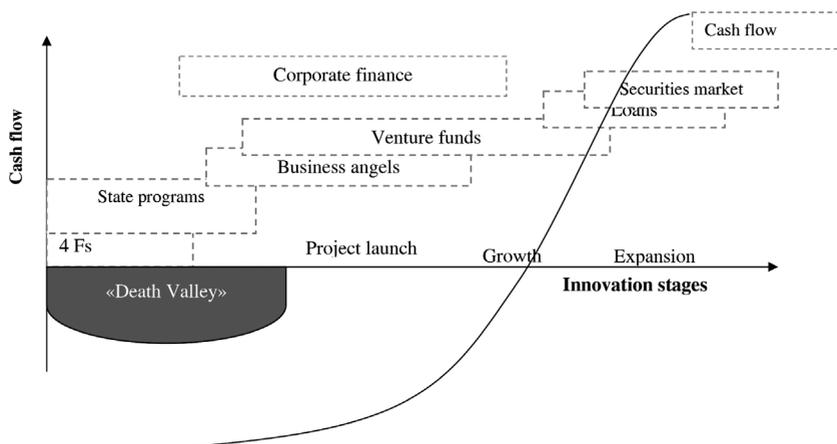
Source: Lukianenko O.D. The Innovation factors of Global Competitiveness. – K.: KNEU, 2015. – P. 85 – [in Ukrainain]

Analysis of information presented in Fig. 6.1 allows to diversify the search for opportunities to provide financial support for innovation through combining not only the sources, which is most obvious in practice, but also the forms, types and kinds. As world experience shows, the leading modern tendencies in financing innovative activity, along with the overall increase in its size, caused by innovative strategic motivation under high costs of innovative research, are diversification of sources of financing at different stages of the innovation cycle, change of its structure in developed countries in favor of the state, interstate funds, global corporate alliances, which is associated with the magnitude of the fundamental research projects and objective high risks of their implementation and further practical realization.

#### **6.4. Models of financing of innovative process**

The subjects of entrepreneurial activity, especially high-tech companies, face a variety of difficulties in the process of accumulating funds to finance innovative activities. Given the fact that some projects can become highly profitable, while others can bring significant losses to the company, there are huge risks. To a large extent, they can be reduced through the use of a model of stage innovative financing and Pisano-Verganti, which is widely used in the world practice, but practically not used in Ukraine and Georgia, as well as in other post-Soviet states, and is shown in Fig. 6.2.

The presented model of financing allows to optimize sources of financing at various stages of innovative activity, each of which corresponds to different values of cash flow. This flow, in accordance with the so-called I-curve, starts with a loss-making part due to non-profit innovative costs



**Figure 6.2. Cash flow and sources of innovation financing at various stages**

Source: Pisano G.P., Verganti B.N. *Wich Kind of Collaberation is Right for You?*

Harvard Business Review. – 2008. – N 12. – P. 78-86. [in English]

for R&D, whose purpose is to adopt an innovative project and overcome so-called “death valley”. Then it is decided whether to continue or close it. At the initial stage of the project, its financing is carried out primarily through the internal resources of the company, which received the formula 4F (founder, own funds. Funds from family, friends and “fools”). Alternative sources of funding at the initial stage of the innovation process are government programs to stimulate innovation, primarily in the form of government grants. One of examples of such grants in the USA is SBIR (Small Business Innovation Research). This program was established in 1989 during a period of decreasing competitiveness of the American economy and encouraging the development of small high-tech firms. In accordance with the terms of participation in this program, at an early stage, the firm is provided with financing in the amount of \$850,000, including \$100,000 for 6 months for an estimation of prospects of the project and \$750,000 for development of

the project and manufacturing of a prototype. After that, companies, as a rule, turn to other sources of funding, primarily venture funds. It is worth noting that this program played a key role in the implementation of many successful innovation projects of many companies such as Intel, Compaq, Apple, and others<sup>23</sup>.

It is interesting to note that the capabilities of this fund can also be used by entrepreneurs from other countries, including Ukraine. In particular, we mean a group of entrepreneurs and inventors from Kyiv, headed by Maxim Herbut. In the past year, their project PassirDom was among the 100 best innovative projects in Central and Eastern Europe according to Google and the Financial Times. Now, with the support of SBIR and other investors, his company is building a plant in Nevada to construct autonomous economical houses of the future, and also participates in NASA's competition for creating three-dimensional objects on Mars from local materials. The basis of their technology for making a home on Mars is a robot that can melt the basalt rock at 1700 degrees and melt out the necessary structural parts from it. Another Martian project of the group for NASA is the assembly of buildings from stones of various shapes on the basis of the so-called digital computer model of cobblestones, which allows to select the stones available in nature so accurately that they fit tightly together without using solute<sup>24</sup>.

Among other instruments of state support for innovation, we should note preferential loans to small and medium-sized promising technological or newly created enterprises. For example, in Great Britain, the amount of credit guarantees for 10 years is £1 million, and the maximum turnover should not exceed £25 million at annual rate of 2%. Domestic rates range from 0.1% (Germany) to 4.5% (Brazil)<sup>25</sup>.

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23 Panchenko Y., Voichak M. Forming and Development of Corporation Potential of Hightechnology Export // International Economic Policy. – K: KNEU. – 2015. – N 1. – P. 28-30. [in English]

24 Facties and commentaries. – 2017. 28.XII. – P. 24 [in Ukrainian]

25 Afuan Allan, p. 68.

One of the new modern ways of financing innovation is the business angels. They are people who invest their personal funds in perspective and at the same time highly risky, from their view, projects and enterprises, as well as provide them with their own network of contacts, connections and experiences. In return, from entrepreneurs-innovators, business angels receive a share in business. Usually, the volume of investments is from \$30-300,000 to \$1-2 million. USA. As a rule, the activity of business angels is confidential at the time of financing. Therefore, statistics in this area does not exist. However, a huge number of successful examples of business angels' support for various ventures allows us to conclude that the role of this funding instrument is growing. In this regard, we will provide an example of the work of Ross Perot, a classic business angel, who supported S. Jobs after leaving Apple to create the new company Next in late 1986.

R. Perot at this time was not only a Texan billionaire, but also a member of the board of directors of General Electric. S. Jobs sent a proposal to potential investors to sell for \$3 million 10% of the company Next, which was valued at \$ 30million. Proposal was received by R. Perot, who earlier refused to S. Jobs in Apple's support, but after unsuccessful negotiations over the phone, he said him the famous phrase: "If you need an investor, let me know." Negotiations were difficult given the refusal of R. Perot to support Microsoft, whose price at that time exceeded \$1 billion. The result of the negotiations was the sale of 16 per cent of Next to Perot for \$ 20 million. S. Jobs was obliged to invest \$ 5 million, and the company's price was \$125 million, or more than 4 times more than before the negotiations. Both parties won, and Next became one of the leading computer companies<sup>26</sup>.

A growing role in financing innovations is played by venture companies or funds. Venture companies usually invest money, if by its estimation, the annual return on equity is at least 35%. Since it is extremely problematic to receive such profit for many years, the terms of venture financing are from 2

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26 Isaacson Walter. Steven Jobs, p. 248.

to 4 years, and after that, the enterprise is sold to a professional buyer or by public offering of securities to the stock exchange. Nevertheless, the volume of venture innovation financing in the 21st century is steadily growing. In 2005, it was \$34 billion and grew to more than \$50 billion in 2016. With it, the US's share in such financing is more than 70%. The following are China (13%) and the European Union (12%). As it can be seen, the remaining countries account for only 5%. Naturally, venture financing of innovation in Georgia and Ukraine exists only in the long view<sup>27</sup>.

“Venture folklore” is based on two axioms. The first is that “lemons mellow before plums”. In other words, a venture firm can quickly go bankrupt, as its revenues mature very late (in order to wait until they meet expectations and they can be sold with maximum profit, a lot of patience is required). The second axiom contains the provision that out of ten venture firms only three justify the expectations, but one of them will pay back the costs of all the rest, turning into a superstar. The ratio of received and invested funds to such company is 10 to 1 or more. The secret of successful venture innovation financing is not to avoid failures that are inevitable, but to open as many stars as possible.

As for such sources of innovative lending as bank lending and the securities market, their role is not significant not only in Ukraine and Georgia, but also in the whole world. The reason is connected with high risks, which make resources so expensive that they become uncompetitive. In Ukraine, there are additional negative factors for eliminating the banking system and the stock market from innovative financing. First, both sectors remain underdeveloped by scale and dynamics of development. For example, the loan portfolio of banks reached a maximum in 2014 (UAH 1,020 billion) and decreased in 2017 to UAH 973.7 billion. Second, the quality of functioning of these sectors is still low.

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27 Kiriakova M.E. The Development of Innovation Activity Models in Multinationals. The Manuscript. – K.: KNEU, 2017. – P. 88-89. [in Ukrainian]

Nevertheless, some experience of credit financing of innovation activity in Ukraine has been accumulated. The maximum of such loans was achieved in 2008 - UAH 4.04 billion (\$0.64 billion). In the future, they fluctuated in connection with the global financial crisis from UAH 0.63 billion in 2010 (\$0.08 billion) to UAH 5.49 billion in 2011 (\$0.6 billion). With it, in the general structure of financing innovative activity, innovation lending fluctuated in a wide range of 6-38%<sup>28</sup>.

The attraction of credit funds allows enterprises to expand the innovation and technological basis of production. With it, at the present time, after a reduction in the number of banks during 2015-2017 twice and the scandalous wide-disseminated nationalization of Privatbank, which required its capitalization from the budget of more than UAH 155 billion (USD 5.8 billion), the interaction between the financial and real sectors of the economy is hampered by the intensification of contradictions between them and the strengthening of the dominance of the former over the second. In conditions of expensive credit resources, low-profit enterprises, especially small and medium-sized enterprises, are the main innovators in Ukraine. For them, attracting long-term loans for the implementation of innovative activities is mostly unavailable.

A significant negative role in this sphere was played by the introduction by the National Bank of Ukraine in 2017 of international practice of definition of so-called idle or problem loans. This practice is undoubtedly more objective, but it has become the world's negative leader by the level of credit markets. The real level of problem loans issued by Ukrainian banks reached 58% in July last year. For comparison, we will give indicators for other countries: Afghanistan - 50% (2010), Nigeria - 38% (2016), Equatorial Guinea - 28% (2016), etc. It should also be noted that the share of loans

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28 Panchenko Y., Lukianenko O. The Peculiarities and Perspectives of Innovation Activity Development in Ukraine: Sectoral and Local Approach. – University of Tampere Finland, 2016. – P. 109. [in English]

overdue by more than 90 days (i.e., probabilities of repayment are low) is about 80%<sup>29</sup>.

To integrate banking activities with the development of high-tech sectors of the Ukrainian economy through innovative lending, it is necessary to develop and implement a systematic approach to the development of the banking services market, in particular:

- formation of public-private insurance of loans, which are oriented to the implementation of innovative projects;
- state support for the activities of those banks and financial institutions that have a higher (compared to average in the country) proportion of loans (assets, for example, more than 15%) in the loan portfolio structure;
- development of a network of branch innovative banks and financial companies for refinancing innovative loans and opportunities for their participation in equities of enterprises in these industries;
- creation of an integrated system for financing innovative development with the participation of banks that will provide risk management based on modern technologies for assessing the innovative and financial risks of individual projects and their further distribution in various areas of activity;
- creation and maintenance of the credit register of the National Bank of Ukraine based on the experience of other countries of the world, which is a system of data on credit transactions with the mandatory allocation of innovative projects, which will allow banks to use this information when assessing the level of credit risk before providing innovative financing, and also to learn in advance about problems of a potential innovative borrower while servicing other loans.

Despite the apparent diversity of the above mechanisms for financing innovation, the main role here is played by relevant corporate funds, mainly of

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29 Vigovsky A. Loaning as Potencial Risk. – ZN.UA. – 2018. - № 1. – p. 5 [in Ukrainian].

transnational corporations. Leading corporations allocate for their research and development from 4 to 13% of gross income. For example, in 2016, these costs for some of the leading corporations were: Google - 13.6% (\$5.2 billion), Microsoft - 12.9% (\$9.0 billion), Amazon - 7.2% (\$6 billion), IBM - 6.0% (\$6.3 billion), Samsung - 6.0% (\$9.0 billion), Toyota 4.2% (\$9.9 billion), General Electric - 14% (\$8.7 billion), etc.<sup>30</sup> Herewith, leading corporations take into account the positive impact of optimizing their investments in R&D based on the modified Cobb-Douglas production function, which, in addition to capital costs (K) and labor (L), includes R&D (R) costs:

$$Y=K^a L^b R^c$$

Modified exponent characterizes the increase in income under the influence of increasing of each type of costs. Analysis of the leading corporations allowed to determine the average R&D exponent (C) in the amount of 0.11. This means that an increase in research and development costs by 1% will lead to an increase in yield by 0.11%, and then, market capitalization. Analysis of 20 US leading corporations (Exxon Mobil, Chevron, General Electric, Ford, Hewlett-Packard, IBM, Apple, Boeing, Microsoft, and others) has shown that the optimization of investments with the proposed method will allow to achieve annually an increase in their total market capitalization for about \$1 trillion.<sup>31</sup>

A similar model for financing innovative activities is also successfully used in the member countries of the Organization for Economic Cooperation and Development (Figure 6.3).

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30 Jaruzelski B. The Global Innovation 1000 [Electronic source] – Retrieved from: <http://www.bu02.com/global/home/what we think/featured content innovation 1000-2017>. [in English]

31 Kline S.J. An Overview of Innovation. The Positive Sum Strategy: Harnessing Technology for Economic Growth – Washington: National Academy Press, 1986. P. 80. [in English]

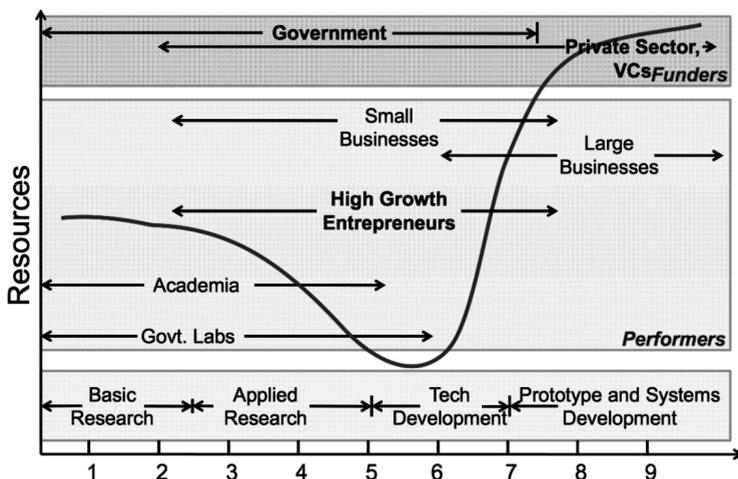


Figure 6.3. Allocation of resources for performing R&D

Source: <http://wp.ifi.uzh.ch/leitner/?p=346>. [in English]

This model, like the previous one, shows the relationship between the size of innovative financing and the stages of the life cycle of the innovation project. Like the previous model, it shows a nonlinear dependence of the increase in the size of R&D financing from the stage of fundamental research to obtaining a ready-made prototype. At the same time, this model is closer to the practice of innovative management, and therefore, can be adapted to specific projects while preserving the fundamental diversity of funding sources at various stages of implementation of innovative projects.

First, the subject of the model is the volume of financing for the period of the innovation cycle, which can be more accurately defined, in contrast to the cash flow, as in the previous model. Second, the stages of the life cycle are defined more pragmatically, not only in the context of formulations, but also the possibility of linking them to time parameters. The figures on the horizontal axis indicate the level of technological readiness of the project.

The Funders section indicates the distribution of sources of financing by sectors of the economy. The Performers block indicates the distribution of performers. Third, the model contains a list of more diverse participants of innovative financing. In addition to the previous model, large enterprises and small businesses, fast-growing enterprises, government laboratories and academic organizations are indicated. In this regard, it can be concluded that for the post-Soviet countries, including Georgia and Ukraine, the above model is better suited to the task of forming a new system for financing innovation. In addition, it is important to take into account the specifics of financing innovative activities in our countries.

For Ukraine, the defining and generally recognized trend of innovative financing is the extreme limitations of not only the sources, but also facilities. First, with a small volume of gross domestic product, the share that is allocated to finance research and development is insignificant. During the years of Ukraine's independence, it decreased by 35% and in 2017, amounted \$2,600 per capita. According to the World Bank's data, this is the worst result in the world for the last 24 years. As for the financing of innovation, in recent years, it has been 0.5-0.7%, while in OECD countries, it has increased from 2000 to 2016 from 2.17 to 2.5%<sup>32</sup>. Second, this is followed by extremely small volumes of funding for research and development. For example, the maximum level of spending on innovation was reached in the Ukrainian industry in 2007 - about UAH 12 billion, which is equivalent to \$1.6 billion. This is 5.5 times less than the amount of funding for research and development of only one, and not the largest company General Electric. Third, high limitations of external financing force innovating enterprises to look for internal resources for innovative development. In the 2000-2013, their share was 85-88%. For comparison we should admit that in OECD countries, the funds of enterprises in innovative financing account in average for 50%,

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32 Unkovska T. New Economical Strategy for Ukraine. – ZN.UA. – 2017. – № 7. – p. 7. [in Ukrainian]

**STRATEGIC PRIORITIES FOR DEVELOPING  
UKRAINE AND GEORGIA: INNOVATION AND PARTNERSHIP**

government funds - 35%, universities - 5%, non-profit organizations - 3%, foreign investors - 7%<sup>33</sup>.

In the process of innovative financing, one more structural problem arises: what scientific areas should be the priority in each country? As you know, even the leading world innovative countries cannot keep leading positions in all scientific areas. In this regard, it is very useful to classify the R& D areas used in OECD countries. It includes six areas of research and development: natural, technical, medical, agricultural, social, and humanitarian. In these areas, financial expenditure statistics are recorded, which provides information for comparative studies. Table 6.4 shows such data for a number of countries.

**Table 6.4**

**Distribution of shares of R&D financing by countries and areas in  
2016, %**

Spheres	Korea	German y	Italy	Turkey	Spain	Russia	UK
Natural science	15	28	38	47	22	44	38
Technical science	63	44	40	23	25	17	17
Medical science	3	2	8	7	30	18	17
Agricultural science	9	21	4	5	14	11	13
Social science	9	2	3	4	5	6	13
Humanitarian science	1	3	7	4	4	4	2
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Pisano G.P., Verganti B.N. Which Kind of Collaboration is Right for You? Harvard Business Review. – 2008. – N 12. – P. 78-86. [in English]

As can be seen from this table, the structure of research funding is extremely diverse. Unfortunately, in this table, there are no figures for Georgia and Ukraine, because, on the one hand, they are not presented to the OECD statistical services, and on the other hand, there is no interest of the govern-

<sup>33</sup> Innovation Ukraine-2020, pp. 212-219.

ment authorities in enhancing the transparency of financing research and development in our countries. Although the Academy of Sciences in Georgia is abolished, and in Ukraine it continues to function, the result is one - there is no material for comparative studies. Nevertheless, given the similarity of Ukrainian and Russian science in terms of the composition of the respective institutions, it can be assumed that of all the countries cited, Russia's indicators are closest to Ukraine. What conclusions can be drawn from the analysis of the materials in the table?

First, the technical sciences occupy leading positions in most countries (Korea, Germany, Italy, Spain). Especially impressive is Korea, which spends 63% of all costs on these sciences. Therefore, it becomes clear why Korea in the last decade managed to make a technological leap, especially in the digital economy. At the same time, the lag in this area of Russia and the UK is noticed, which in the future may cause a decline in the index of technological development. And if this is quite natural for Russia, the figures for the British government turned out to be unexpected and caused serious discussion in connection with the prospect of secession from the EU. It should also be noted that the financing of technical sciences allowed Germany to maintain a high integral index in the system of indicators of the innovative panel of the European Union (Innovation Union Scoreboard) - 0.697 with an average for the EU - 0.544, while Italy in the previous ten years increased this index from 0.306 to 0.422 and was able to exceed Spain - 0.397. It is important to emphasize the penultimate position of Ukraine in this index in the system of EU countries - 0.206. Ukraine was included in the group of countries - emerging innovators and exceeded only Bulgaria - 0.175<sup>34</sup>.

Second, attention is drawn to the priority role of natural sciences in Turkey - 47%, Russia - 44%, Britain - 38% and Italy - 38%. If for Russia such a situation is fully explainable by the need to study huge territories and the policy of preserving the leading positions in the space sector, the military-in-

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34 The same, p. 312.

dustrial complex, Turkey made a serious leap in this indicator. In our opinion, in the long term, we should expect building up technological advances in Turkey on the basis of developments in physics, chemistry, etc. We also note that the success of the UK in natural scientific developments allowed this country to maintain a high integrated innovation index at the level of 0.617. Third, the United Kingdom is the obvious leader in the overall financing of social and human sciences, which provides it with the highest indicator of “human resources” in the aforementioned European scoreboard - 0.767. Other countries represented in the table have not only a smaller share of funding for these social and human sciences, but also lower indicators of human development: Germany - 0.633, Italy - 0.410, Spain - 0.408, Turkey - 0.096. In this regard, we should emphasize the convincing position of Ukraine - 0.551, due to which it became one of the countries - active innovators. Thus, it can be concluded that the structure of financing of key research and development areas plays an important role in the positions of the countries that are members of the innovative board of the European Union.

If we consider the state of financing innovative activity in Ukraine as a whole, we should evaluate its position on the indicator of the innovative board of the European Union “Finance and Support”. With an average of this indicator for the EU of 0.558, for Ukraine, it is 0.101. For the other countries shown in table 3, the indicator is such: United Kingdom - 0.623, Germany - 0.613, Spain - 0.402, Turkey - 0.371, Italy - 0.306<sup>35</sup>. Taking into account these assessments, it should be concluded that in Ukraine, there is currently no effective system of financial support for innovation activities. In these conditions, private investors, financing innovative projects with little or no state support, are forced to assume all the risks, and it hinders the scientific and technological development of Ukraine. Therefore, the creation of an effective system of state support for innovation, including the financial subsystem, becomes a priority task.

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35 The same, p. 313.

## REFERENCES

- Afuan Allan.** Innovation Management: Strategies, Implementation and Profits. Second Edition. – New York: Oxford University Press, 2003. – 390 p. [in English]
- Andrew J.P.** Payback Reaping the Rewards of Innovation / J.P.Andrwe, H.L.Sirkin, J.Butman. – Boston: Harvard Strategic Challenges of the 21st Century to the Society and Economy of Ukraine. – K.: Fenix, 2007. – 304 p. [in Ukrainian].
- Armstrong Hj.** Regional Economics and Policy / H.Armstrong, J.Taylor. – Oxford: Blackwell, 2000. –448 p. [in English]
- Davila T.** Making Innovation work. How to Manage it, Measuve it and Profit from it / T.Davila, M.J.Epstein, H.Shelton. – New Jersey: Wharton School Publishing, 2006. – 320 p. [in English]
- Fedirko A. A. .** Key Trends and Problems of Regional Innovation Systems Development in Poland and Ukraine / Central European Review. – 2014. – N 3. – P. 38-45. [in English]
- Gaidutskiy P.J.** Un Forgotten Reforms in Ukraine. – K.: TOV “DKS-Center», 2017. – P. 673 [in Ukrainian].
- Hollanders M.** Regional Innovation Scoreboard, 2016. – Brussels: Publications Office of the European Union, 2016. – 74 p. [in English]
- Improving Strategies, Policies and Regulation of Innovations in Ukraine. European Aid/127694/C/SER/UA. – K.: Fenix, 2011. –128 p. [in English]
- Innovation Management. – Boston: Harvard Business School Publishing Corporation, 2001. - 237 p. [in English]
- Innovation Management. – K: RAMO, 1991. – 112 p.[in Ukraine]
- Innovation Management: concepts, strategy and mechanism. – M.: Delo, 2006. – 584 p.[in Russian]
- Innovation Ukraine-2020: National Paper National Academy of Science of Ukraine. – K., 2015. – 336 p. [in Ukrainian].
- Isaacson Walter. The Innovators. How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution. – New York: Simon & Shuster, 2014. – 616 p. [in English]
- Isaacson Walter. Steven Jobs. Biography of Founder Company Apple. – New York: Simon & Shuster, 2014. – 608 p. [in English]

- Jaruzelski B.** The Global Innovation 1000 [Electronic source] – Retrieved from: [http://www.bu02.com/global/home/what we think/featured content innovation 1000-2017](http://www.bu02.com/global/home/what_we_think/featured_content_innovation_1000-2017). [in English]
- Kiriakova M.E.** The Development of Innovation Activity Models in Multinationals. The Manuscript. – K.: KNEU, 2017. – 182 p. [in Ukrainian].
- Kline S.J.** An Overview of Innovation. The Positive Sum Strategy: Harnessing Technology for Economic Growth – Washington: National Academy Press, 1986. P. 80. [in English]
- Lukianenko O.D.** The Innovation factors of Global Competitiveness. – K.: KNEU, 2015. – 298 p. [in Ukrainian].
- Making Innovation Benefit All: Policies for Inclusive Grows. – Paris: OECD. – 68 p. [in English].
- Panchenko Y., Lukianenko O.** The Peculiarities and Perspectives of Innovation Activity Development in Ukraine: Sectoral and Local Approach. – University of Tampere Finland, 2016. – P. 109-110. [in English]
- Panchenko Y., Voichak M.** Forming and Development of Corporation Potential of Hightechnology Export // International Economic Policy. – K: KNEU. – 2015. – N 1. – P. 28-30. [in English]
- Pisano G.P., Verganti B.N.** Wich Kind of Collaberation is Right for You? Harvard Business Review. – 2008. – N 12. – 128 p. [in English]
- Shnipko O.S.** Innovative Default of Ukraine. – K.: Geneza, 2009. – 198 p. [in Ukrainian].
- Surjik L.** Give me the Mode / Financing of Science. – ZN.UA. – 2018. – N 2. – P. 3 [in Ukrainian]
- The Framework Programme for Research and Innovation. – Retrieved from: <http://ec.europa.eu/programmes/horizon2020/eh/what-horizon-2020>. [in English]
- Unkovska T.** New Economical Strategy for Ukraine. – ZN.UA. – 2017. – № 7. – p. 7. [in Ukrainian].
- Vigovsky A.** Loaning as Potencial Risk. – ZN.UA. – 2018. - № 1. – p. 5 [in Ukrainian].