

STRATEGIC PRIORITIES OF UKRAINE'S INVESTMENT AND INNOVATION DEVELOPMENT IN MODERN INTERNATIONAL ECONOMIC ENVIRONMENT

Yaroslav Izmaylov

Associate Prof. PhD, Kryvyi Rih Economic Institute of Kyiv National Economic University
named after Vadym Hetman,

e-mail: izmaylov_yo@kneu.dp.ua, orcid.org/0000-0003-4853-205X, Ukraine

Daina Znotina

PhD, Rezekne Academy of Technologies,

e-mail: daina.znotina@rta.lv, orcid.org/0000-0002-9028-7628, Latvia

Hanna Puriy

Associate Prof. PhD, Kryvyi Rih Economic Institute of Kyiv National Economic University
named after Vadym Hetman,

e-mail: puriy_av@kneu.dp.ua, orcid.org/0000-0003-4226-4445, Ukraine

Abstract. The research generalizes the approaches towards a country's investment and innovation development in the modern international economic environment. It analyzes the dynamics of the investment and innovation changes in Ukraine and determines the place of the country in the world rating of poor economic positions. Some basic problems of the investment and innovation development of Ukraine's economy in international economic conditions are highlighted. An algorithm of preparing, making and realizing investment and innovation decisions at Ukraine's enterprises is developed considering the system impact of factors on the development of national and foreign business entities. The authors define and substantiate some strategic priorities and suggest a strategy of Ukraine's investment and innovation development under globalization conditions.

Keywords: strategy, investment and innovation development, globalization

DOI: <http://dx.doi.org/10.23856/2405>

Introduction

In the globalized world, humanity has to make unanimous decisions as to future co-existence, survival and determination of new development vectors. The search for radically new forms of economic life aimed at production intellectualization, new approaches to social division and labour organization and information technology application have become a priority for the world countries.

The intellectual economy advantage is its wider opportunities for development as, unlike the material ones, intellectual and information resources have no quantitative limits.

The world economy development, internationalization of economic relations and the implementation of Ukraine's Association agreement with the EU require the transition to the investment and innovation strategy of Ukraine's economic development. The choice of this strategy for Ukraine's economy is substantiated by the success of the world economies including advanced European countries. Investments and innovations play a significant role in these countries, which is reflected in high living standards, shares and exclusive quality of their products on the world market.

Theoretical fundamentals of investment-innovative economic development in the international economic environment

According to the European Parliament and Council Regulations # 294/2008/EU with the changes (the Ukraine-EU Agreement, 2015) brought by The European Parliament and Council Regulations # 1292/2013 as for the foundation of the European Innovation and Technologies Institute which are applied to Ukraine's participation in educational and innovation societies, innovations are considered to be a process and its result by means of which new ideas meet social or economic interests and generate new products, services and models of businesses and organizations introduced onto the current markets or able to create new ones.

Considering this, the EU major investment policy directions include financing improvement, tax incentives, enhanced commercialization of investigations making the notion of innovation more precise.

According to V. M. Geyets (Geyets, 2014), the industrial policy of the investment and innovation pattern will have an export-oriented character. In due course, European export will have more opportunities to access the Ukrainian market, thus increasing the competitiveness level. Under these conditions, an import substitution effect is essential to take place. On the one hand, it is important to support those who modernize the industry. On the other hand, and it is of primary importance, one should provide for transparent conditions of competitiveness and prevent market monopolization by foreign producers. At the same time, it is necessary to give support to joint businesses on the territory of Ukraine and expand their localization.

The monograph by Hlaziev S. Y. (Hlaziev, 2010) investigates the rapid development based on the progress in science and technology and scientific data realized fully through globalization. The latter enhances the world-wide scientific and technological exchange, provides an access to new technologies, thus ironing the technological progress among various countries.

N.V. Ivanova (Ivanova, 2014) proves that a country's productive forces recovery is based on high technologies facilitating the product competitiveness on the external market.

A.V. Uhina (Uhina, 2016) substantiates the fact that innovations are a qualitative component of the economic growth and investment is its quantitative component. Innovations composing the investment component determine various directions of refinancing relevant technologies, products and services. It enables the economic system to reach a higher level.

The research works by Junfeng Zhang, C. Anthony Di Benedetto and Scott Hoening (Zhang, 2009) suggest an innovative product development strategy. Zhaleh Najafi-Tavani, Ghasem Zaefarian, Stephan C. Henneberg, Peter Naudé, Axèle Giroud and Ulf Andersson (Najafi-Tavani, 2015) analyze the research development in knowledge-intensive business services. Kuen-Hung Tsai, Yi-Chuan Liao and Teresa Tiaojung Hsu (Tsai, 2015) work out a mechanism of increasing the product innovativeness.

Having generalized the approaches to defining the notion of investment and innovation development which exist in the world and Ukrainian economic science, Y. O. Izmaylov (Izmaylov, 2014) suggests regarding it as a purposeful process of improvement by means of investments and innovations. On the micro level, it results in enterprises' efficient economic activity. On the macro level, it facilitates increase in the national economy, the development of science and technology and standards of living.

The national economy's transition towards the investment and innovation development model is based on enterprises' enhanced investment and innovation activity. Under conditions

of developing the international economic relations and clearly defined modern approaches to the investment policy in the course of “Europe 2020” Strategy, which considers Ukraine’s striving for the EU membership, the choice of the strategic guides of Ukraine’s investment and innovation development considering modern trends in the European and world economy has become a priority.

Problem statement. The research is aimed at determining and substantiating the strategic priorities of Ukraine’s investment and innovation development in the international economic environment.

Material presentation and results.

The strategic economic development of an enterprise, a region and a country is possible only if innovations, energy-saving technologies, new materials and new forms of economic organization are used. It is impossible to imagine up-to-date technique and technology without scientific advancements implemented. In the past, science used to be a sphere of human activity independent of other factors of social life. It has started to get interrelated to other spheres of human activity, especially, to the industry and engineering. Science has a great impact on them, yet, it cannot evolve without them.

It should be noted that modern approaches to pursuing the EU innovation policy include:

- improving the innovation environment through enhancing the innovation component of all directions of national policies and their integration;
- stimulating the market demand for innovations and applying the conception of “leading” markets implying the support of the markets favourable for innovations;
- stimulating the innovations in the public sector, overcoming the bureaucratic conservatism of the state administration;
- intensification of the regional innovation policy.

The development strategy “Europe 2020” is an innovation project itself. It introduces such innovation elements as:

- authorizing the European Commission to pursue the prevention policy as a means of the final recourse for undisciplined EU member-states;
- setting a national goal in the sphere of the EU strategic development;
- creating conditions for improving the financing of the special-purpose process and maximizing the conformity to other EU documents.

Thus, the basic factors of the EU economy enhancement include sensible, sustainable and inclusive growth taken into account in the 8th Frame Agreement “Horizon 2020”.

Considering the experience acquired by the EU in the investment and innovation sphere, in order to create the required conditions of countries’ investment potential development there are required corresponding industrial and technological structures; information systems; financial support of innovations; a sufficient level of people’s education and researchers’ training.

In the modern globalized world, even the arms race is often considered a real form and an effective factor of innovation development. It works for both a separate country and the whole world. Regarding Ukraine’s current situation, the trend of creating and producing various types of military technique and arms is able to accelerate innovations in the national economy. At the same time, to successfully realize the strategic direction of the investment and innovation development one should take into account the fact that its implementation requires the prospect of products entering the external markets. Limitation by the internal consumption, as a rule, leads to irrational cost usage and, which is worse, to macroeconomic

instability.

In case of transition to a highly technological mode of developing and forming the knowledge society, basic strategic drivers of Ukraine's economy aimed at increasing its international competitiveness include high quality human capital, science, education and hi-tech business, modern technological equipment, efficient organization of research and designing developments, an effective system of scientific data commercialization.

According to the official website of Civil Service of Statistics of Ukraine, in 1991-2015, the number of Ukrainian scientists dropped by almost four times – from 313079 to 63864 people. At the same time, the number of doctors of science doubled and that of candidates of science increased by half in the same period. The number of research organizations decreased greatly from 1344 in 1991 to 978 in 2015.

The gradual loss of Ukraine's scientific potential can negatively affect the national economy under accelerated innovation changes of the world economy.

The accumulated potential of the national science is proven by the fact that Ukrainian scientists are in great demand on the European and world markets of scientific personnel and developments. Yet, high mobility of Ukraine's personnel is provided without any assistance of the state and cannot serve its interests. Numerous Ukrainian scholars working at foreign scientific institutions are out of the country's sphere of interests.

Expert analysis data obtained during the State programme of Ukraine's scientific, technological and innovative development forecasting indicate that the national science has retained the ability of performing research and obtaining results according to the world standards in the following directions: development of new sections of mathematics (the theory of functions, functional analysis) and theoretical physics; investigations of nanostructures and development of nanotechnologies; radiophysics of the millimeter and submillimeter range; immune biotechnologies and molecular diagnostics; biotechnology of plants and biophysics; cryobiology and cryomedicine, neuroscience including neurophysiology; informatics; micro- and optoelectronics; aerospace technologies, and some other directions in physics, chemistry and biology. Ukraine has retained a powerful potential of material science, which is unprecedented, at least for Europe.

At present, if the substantiated state strategy is created and applied, Ukraine has a chance of entering the world market in the following research directions: technologies and a machine complex for welding living tissues during surgical operations; polyorganosiloxane adsorbents; Ukrainian antibiotics (cyclosporines), superhard materials and instruments, etc.

That is why, there arises an urgent need to overcome the negative trends in the Ukrainian scientific sphere by creating the state policy aimed at forming a radically new scientific and technological potential and enhancing its maximum growth to ensure the national economy transition to the innovation development mode in the international economic environment.

The dynamics of innovations at Ukraine's enterprises as a factor of enhancing the competitive advantages of Ukrainian products on the international markets is shown in Table 1.

Table 1

Innovations at Ukraine's enterprises aimed at enhancing competitive advantages of national products in 2000-2015

Indices	Years								
	2000	2008	2009	2010	2011	2012	2013	2014	2015
Proportion of enterprises introducing innovations, %	14.8	10.8	10.7	11.5	12.8	13.6	13.6	12.1	15.2
Number of new technological processes, units	1403	1647	1893	2043	2510	2188	1576	1743	1217
including low-waste, resource saving ones, units	430	680	753	479	517	554	502	447	458
Number of innovative products introduced in industry, units	15323	2446	2685	2408	3238	3403	3138	3661	3136
including new machine types, units	631	758	641	663	897	942	809	1314	966
Proportion of sold innovative products in production, %	9.4	5.9	4.8	3.8	3.8	3.3	3.3	2.5	1.4

Notes: composed by the author according to the data by the official website of Civil Service of Statistics of Ukraine

Table 1 reveals that the proportion of enterprises introducing innovations to enhance international competitive advantages of the national products on the international markets reached its maximum in 2015 (15.2%). It indicates positive trends of introducing innovations. However, the introduction of new technological processes decreased greatly. As to the introduction of innovative product types the number of units dropped from 15323 in 2000 to 3136 in 2015. At the same time, the number of new machine types increased from 631 units in 2000 to 966 units in 2015. The ratio of the sold innovative products in production output is critically low for the Ukrainian economy decreasing from 9.4% in 2000 to 1.4% in 2015. Thus, having analyzed the dynamics of introducing innovations at Ukraine's enterprises, one can conclude that innovations are often ignored by most national enterprises. Yet, they form a promising trend in the investment and innovation development of certain enterprises and of the national economy as a whole.

Dynamics of Ukraine's summarized external trade balance is shown in Fig. 1.

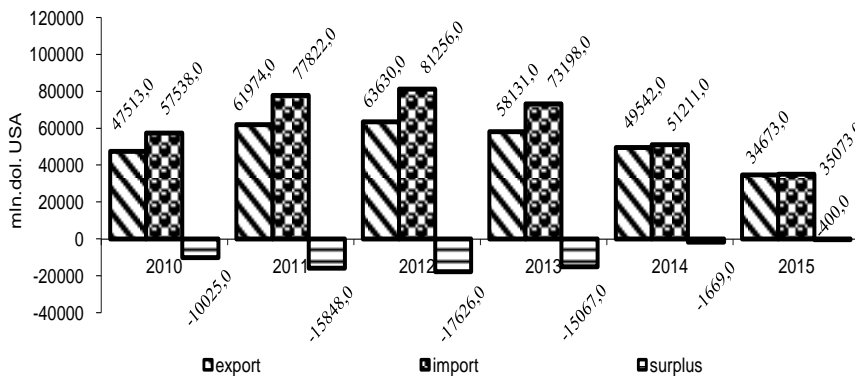


Fig. 1. Dynamics of Ukraine's summarized external trade balance

Notes: according to the data by the official website of Civil Service of Statistics of Ukraine

Fig.1 reveals that from 2010 to 2020 imports increased from \$65754.1mln до \$89774.6 mln, and from 2013 its volume began to decrease. A considerable cut of the imports of goods and services was observed in 2015 compared with 2014 (by \$16138 mln or by 31.5%), which was caused by the unstable political and military situation in the country. In spite of the positive short-term impact of the imports cut on the GDP dynamics, Ukraine will need imports to increase its international competitiveness and exports in future.

Basic problems of Ukraine's investment and innovation development under current conditions of the world economy development are systematized in Fig. 2.



Fig. 2. Basic problems of Ukraine's investment and innovation development in modern international economic environment

Notes: composed by the authors

The strategy of the investment and innovation development of the economy in the international economic environment

Investments and innovations are becoming a driving force for the national economic growth and ensuring their stable positions in the international economic relations. That is why, it is suggested that strategic priorities of Ukraine's investment and innovation development in the modern international economic environment should be distinctly determined (Fig.3).

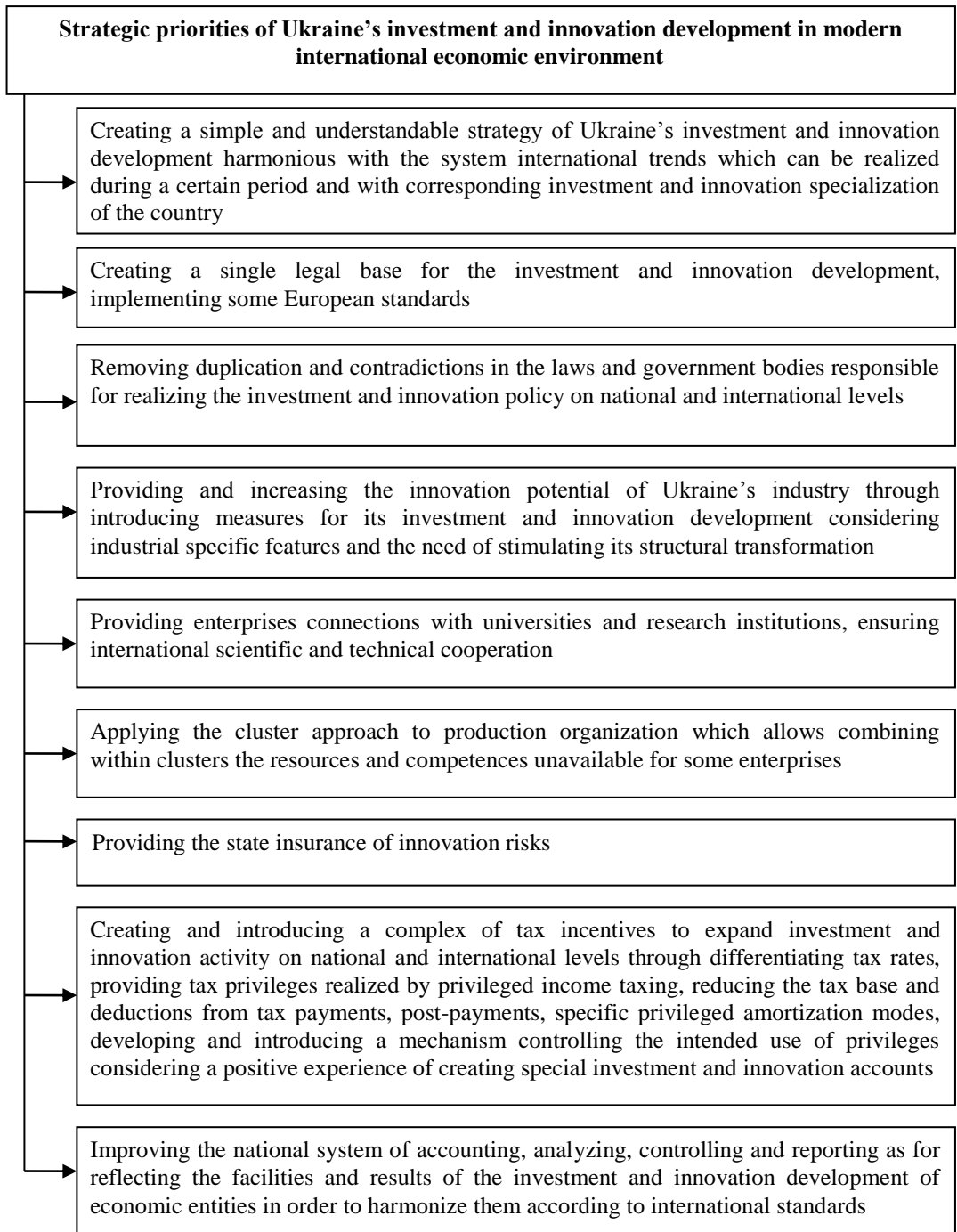


Fig. 3. Strategic priorities of Ukraine's investment and innovation development in modern international economic environment

Notes: composed by the authors

It is essential for the state's industrial policy to be directed at achieving competitive advantages on both internal and external markets which will be based on unique resources, accumulated assets and innovation achievements.

The content of the strategy for Ukraine's development and economic growth will depend on implementing institutional innovations into the economic and social life, which appeared after signing the Association agreement with the EU. Its realization will require institutional changes in the sectors of the Ukrainian economy able to use the accumulated human capital and corresponding material and financial resources. Ukraine should completely withdraw from the policy of stimulating social spendings and transfer to budget investments into the human capital, the creation and development of which are to encourage progressive changes in the economy structure, which is characteristic of the modern highly-developed world. The degree of implementing the investment and innovation model of development is a large-scale genesis and spread of investment and innovation processes in the national economy in all dimensions (state, industry, region, enterprise levels). It will result in progressive structural and technological transformations in the national economy, its high-quality and expanded reconstruction leading to the country's sustainable development. Investment and innovation processes have a system-oriented character and require the state's support (regulation) to direct them according to the strategic priorities established by the national law.

An essential strategic priority for the country's development is its enterprises' modernization on investment and innovation foundations providing additional competitive advantages on the national and international markets.

In any process, there is some consumption and transformation of resources input into the process for its support and development. The resources input into the economic process, in particular into the investment and innovation component of international entities, as potential sources for creating economic benefits can include natural resources (natural substances suitable for use in production); material resources (created by man, namely, production means necessary for industrial processes); labour resources or human personnel engaged at all stages of the process; investment and financial resources; informational and intellectual resources including various intellectual property objects (inventions, research and designing (RD) results, patents, etc.)

The mentioned resources can be input into the economic process (including the investment and innovation processes) of international business entities and directed by the intellectual resource of the management decision.

The intellectual resources promising for commercialization when materialized and the intellectual resources of the management decisions directed by these processes are most essential for investment and innovation processes.

Fig. 4 reveals the factors of impact on the investment and innovation development of Ukraine's enterprises in the modern international economic environment.

External and internal factors including marketing, management, investments, innovations and other resources have an influence on enterprises' activity and development. The mentioned factors play a key role in creating enterprises' development strategy.

Analysis of advanced countries' strategies as for the renovation of their industrial activity based on investments and innovations allows forming the national development strategy of Ukraine's economy in the modern international environment. Its most important components are the following:

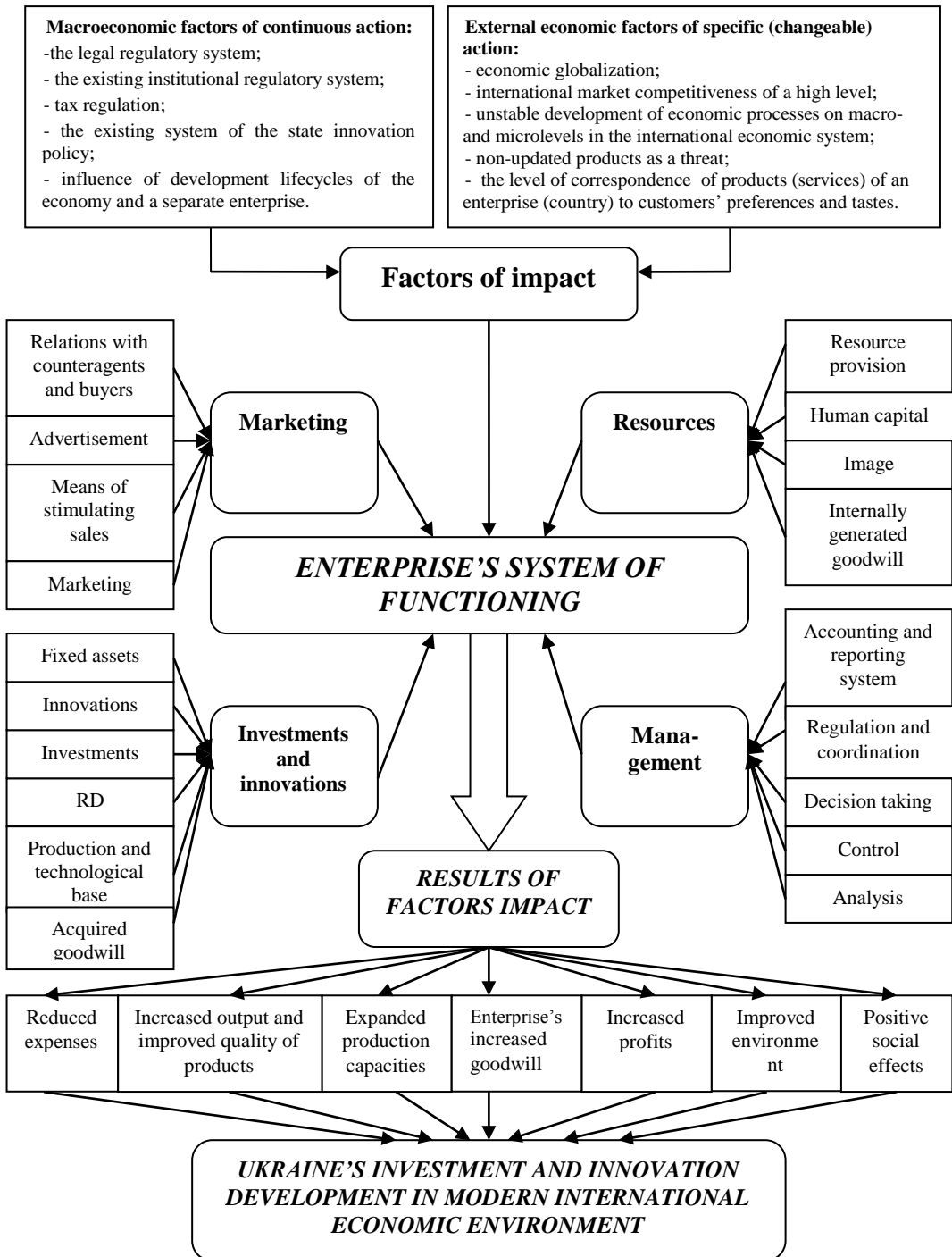


Fig. 4. Basic factors of impact on investment and innovation development of Ukraine's enterprises in modern international economic environment

Notes: composed by the authors

1. Investments into innovations and training of the future highly qualified work force during 5-10 years;
2. Creation and support of development institutions according to priority types of activities including business cooperation with trade unions;
3. Support of industrial activities aimed at facilitating competitiveness of the country's economy;
4. Partnership of the government and manufacturers as an institutional mechanism of investment and innovation changes;
5. Determination of medium- and long-term goals on the basis of the analysis of future development issues and strategies according to activity types;
6. Development and realization of measures aimed at facilitating the attractiveness for business using tax tools, regulatory means of developing corresponding markets both inside the country and abroad.
7. The government's support of development of new technologies and their commercialization according to the established strategy.

Conclusions and suggestions

The analysis of available approaches to the essence and consequences of realizing the investment and innovation development of the world countries allow drawing a conclusion that the choice of Ukraine's priorities in this sphere should consider modern trends of the world and European economy. Such development should be based on the country's enterprises rising their investment and innovation activity aimed at enhancing their position on the internal and external markets. It is substantiated that in the globalized economic conditions only the countries ensuring favourable conditions for the investment and innovation activity associated with development, introduction and application of new technique and technologies become more competitive.

The identified some problems associated with Ukraine's investment and innovation development in the modern international economic environment, include insufficient infrastructure, underdeveloped system of protecting investments and intellectual property, imperfect insurance of investment and innovation risks, lack of businesses' motivation to use hi-tech products of the national economy because of a considerable technological lagging, poor financing of research and introduction of innovative developments, absence of an efficient system of priorities of developing the scientific and technological sphere provided by the state and separate economic entities. To solve the accumulated problems of the investment and innovation development of the Ukrainian economy and taking into account the influence of external factors we suggest a procedure of preparing, making and realizing some investment and innovation decisions at Ukraine's enterprises in the globalized economic conditions.

It is proven that to apply the model of the investment and innovation development of the Ukrainian economy, one should adopt the best practices of the analyzed countries, namely, creating a real strategy of the investment and innovation development of the Ukrainian economy, implementing the European legal standards as for investments and innovations, fighting monopolies; stimulating the economy's structural transformation; ensuring the connections between enterprises, universities and research institutes, developing international scientific and technical cooperation, especially in the military and industrial

complex; applying the cluster approach to organizing industrial production; providing the state insurance of investment and innovation risks; starting a large-scale construction of dwelling and infrastructure for displaced residents; creating and introducing a complex of tax incentives for expanding the investment and innovation activity; improving the national system of accounting, analyzing, controlling and recording for fixing the facilities and results of the investment and innovation development of economic entities; using credits and investments for the economy modernization, etc.

Further research and developments should be focused on improving the theory and methods of the investment and innovation development of the Ukrainian economy considering the trends and prospects of innovations in the EU and the world.

References

- Augsten, T., Brodbeck, H., Birkenmeier, B. (2017). *Innovation und Strategie. Strategie und Innovation*, 9-41. doi.org/10.1007/978-3-658-15684-8_2. [in English].
- Bartoloni, E., Baussola, M. (2017). *Driving business performance: innovation complementarities and persistence patterns. Industry and Innovation*, Vol. 1-21. doi.org/10.1080/13662716.2017.1327843. [in English].
- Freeman, C., Soete, L. (1997). *The Economics of Industrial Innovation*. London: Pinter. [in English].
- Geyets, V. M. (2014). *Institutional conditioning of innovative processes in the industrial development of Ukraine. Ukrainian Economy*, Vol. 12 (637), 4-19 [in Ukrainian].
- Goffin, K., Mitchell, R. (2017). *Developing an Innovation Strategy. Understanding Innovation and Innovation Management. Chapter published Innovation Management*. 108-150. doi.org/10.1057/978-1-137-37344-1_4. [in English].
- Goffin, K., Mitchell, R. (2017). *Understanding Innovation and Innovation Management. Chapter published Innovation Management*. 1-40. doi.org/10.1057/978-1-137-37344-1_1. [in English].
- Hlazier, S.Y. (2010). *The strategy of advanced development of Russia in conditions of global crisis. Monograph. Moscow: Economics*. [in Russian].
- Ivanova, N.V. (2014). *The investment component of the model of development of innovative economy of Ukraine. Efficient Economy*, Vol. 5, 35-39. [Electronic resource]. Retrieved from <http://www.economy.nayka.com.ua/?op=1&z=3005> [in Ukrainian].
- Izmaylov, Y. O. (2014). *Formation of theoretical fundamentals and strategy of investment-innovative economic development at macro and micro level in globalization context. doi.org/10.23856/2002* [in Ukrainian].
- Junfeng, Zh., Di Benedetto, A., Hoenig, C., Scott. (2009). *Product Development Strategy. Product Innovation Performance and the Mediating Role of Knowledge Utilization: Evidence from Subsidiaries in China. Journal of International Marketing*, Vol. 17, No. 2, 42-58. doi.org/10.1509/jimk.17.2.42. [in English].
- Kuen-Hung, Tsai, Yi-Chuan, Liao (2017). *Capacity and the Implementation of Eco-innovation: Toward a Contingency Perspective. Journal Article published Business Strategy and the Environment*, 214-223. doi.org/10.1002/bse.1963. [in English].
- Kuen-Hung, Tsai, Yi-Chuan, Liao and Teresa, Tiaojung, Hsu. (2015). *Does the use of knowledge integration mechanisms enhance product innovativeness? Industrial Marketing Management*, 214-223. doi.org/10.1016/j.indmarman.2015.02.030. [in English].

- Mendell, S., Ennis, D. (1985). *Looking at innovation strategies*. *Research Management*, 28(3), 33. [in English].
- Najafi-Tavani, Zh., Zaefarian, G., Henneberg, Stephan, C., Naudé, P., Giroud, A., Andersson, U. (2015). *Subsidiary Knowledge Development in Knowledge-Intensive Business Services: A Configuration Approach*. *Journal of International Marketing*, Vol. 23, No. 4, 22-43. doi: <http://dx.doi.org/10.1509/jim.14.0150>. [in English].
- Pisano, Gary P. (2015). *You Need an Innovation Strategy*. *Harvard Business Review*. [Electronic resource]. Retrieved from <https://hbr.org/2015/06/you-need-an-innovation-strategy>. [in English].
- Pogodina, T.V., Veselovsky, M.Y., Abrashkin, M.S., Aleksakhina, V.G. (2015). *Improvement of the innovative capacity of a socioeconomic system based on the development of the cluster approach*. *Asian Social Science*, 11(1), 304-312. [in Russian].
- The official website of Civil Service of Statistics of Ukraine. (n.d). [Electronic resource]. Retrieved from <http://www.ukrstat.gov.ua>. [in Ukrainian].
- Uhina, A.V. (2016). *Innovative investment-growth factors the Economic*. *Economic science*, Vol. 2, 197-199. [Electronic resource]. Retrieved from <http://economy.science-review.ru/ru/article/view?id=809> [in Russian].
- Ukraine-EU Agreement on Ukraine's participation in the EU programme "Horizon 2020" (Framework Programme for Research and Innovations for 2014-2020). [Electronic resource]. Retrieved from http://www.zakon2.rada.gov.ua/laws/show/984_018. [in Ukrainian].
- Westland, J. C. (2017). *Emerging Platforms for Innovation: Chapter published in Global Innovation Management*. 249 to 274. doi.org/10.1057/978-1-137-52019-7_11. [in English].
- World Economic Forum Report. (2014-2015). [Electronic resource]. Retrieved from <http://www.weforum.org/reports/2014/2015>. [in English].