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PRIORITIES IN THE INNOVATIVE DEVELOPMENT OF UKRAINE ENTERPRISES AGAINST THE BACKGROUND OF THE MILITARY AGGRESSION OF THE RUSSIAN FEDERATION

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The world economy changes its architecture. These changes are caused by the global technology revolution, which is associated with innovation processes. They cover a wide range of innovations: from the creation of decentralized systems based on trust (the blockchain) to open integrations of artificial intelligence (open AI ecosystem). Such processes configure new features of global markets and, more to the point, new players in these markets. Consequently, the most important task for Ukrainian business is to define clear development priorities related to innovations. This article examines the place of the Ukrainian economy in innovative global processes, identifies the main problems of entrepreneurship development under war conditions, and outlines priorities on the way to innovative reconstruction. An analysis of global innovation trends against the background of modern challenges was carried out on the basis of the Global Innovation Index (GII) for 2022, and the place of Ukraine in these processes was determined. The relationship between innovative contributions and innovative results is shown. The general entrepreneurial potential of Ukraine was determined, inclusive of the background of the Russian war. It has been analyzed why the labor potential, which lost its place of work in connection with the armed hostilities of the aggressor, did not drift into the entrepreneurial private sector and did not join the ranks of the self-employed population. The innovative attitudes of Ukrainian entrepreneurship were analyzed and the industries that do not invest in technological innovation of production were identified. Arguments are presented why innovation can be the key to getting out of the crisis and a way to increase the competitiveness of enterprises in the domestic market, as well as promotion to foreign markets.

ПІДПРИЄМСТВА В УМОВАХ ВІЙСЬКОВОЇ АГРЕСІЇ РОСІЙСЬКОЇ ФЕДЕРАЦІЇ

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Ключові слова:

агресія, війна, глобальні ринки, світова економіка, відновлення, інновації, підприємництво, конкурентоспроможність, реформи, стратегія розвитку

Світова економіка змінює свою архітектуру. Ці зміни викликані глобальною технологічною революцією, яка пов'язана з інноваційними процесами. Вони охоплюють широкий спектр інновацій: від створення децентралізованих систем, заснованих на довірі (блокчейн), до відкритих інтеграцій штучного інтелекту (відкрита екосистема ШІ). Такі процеси формують нові риси глобальних ринків і, що важливіше, нових гравців на цих ринках. Отже, найважливішим завданням для українського бізнесу є визначення чітких пріоритетів розвитку, пов'язаних з інноваціями. У цій статті досліджено місце української економіки в інноваційних світових процесах, визначено основні проблеми розвитку підприємництва в умовах війни та окреслено пріоритети на шляху до інноваційної реконструкції. На основі Глобального інноваційного індексу (ГІІ) за 2022 рік проведено аналіз світових інноваційних тенденцій на тлі сучасних викликів та визначено місце України в цих процесах. Показано зв'язок між інноваційними внесками та інноваційними результатами. Визначено загальний підприємницький потенціал України, в тому числі на тлі російської війни. Проаналізовано, чому трудовий потенціал, який втратив місце роботи у зв'язку зі збройними діями агресора,

не дрейфував у підприємницький приватний сектор і не поповнив ряди самозайнятого населення. Проаналізовано інноваційні настрої українського підприємництва та визначено галузі, які не інвестують у технологічне оновлення виробництва. Наведено аргументи, чому інновації можуть стати ключем до виходу з кризи та способом підвищення конкурентоспроможності підприємств на внутрішньому ринку, а також просування на зовнішні ринки.

Problem statement

The global competitiveness of the world's economies has determined Ukraine's place in several rankings, and the steps assigned to its economy show an alarming trend. On the eve of the large-scale invasion of the Russian Federation, Ukraine ranked 44th among 141 countries in the world according to the skills indicator, with a score of 69.9 on a 100-point scale, and according to the "skills of the future workforce" criterion it ranked 26th (72.6). Supposedly these are quite decent indicators for a country that has been at war with an aggressor since 2014. But if you look at the "innovation capability" indicator, the picture will be different. Ukraine ranked 60th (40.1), and by "business dynamism" it ranked only 85th (57.2), and by sub-indices of the growth of innovative companies it was 109th (42.8) [1]. That is, Ukraine has a fairly high-quality labor potential, but it cannot realize itself. The domestic economy is structurally drifting towards simplification and primitivization, which is caused by a terrible situation with the involvement of the latest technologies in production processes at almost all industry levels. High-tech exports fell below 5% (in the EU, this figure is 15.6% on average, and in the world as a whole – 20.8%) [1]. Therefore, Ukrainian business faces the task of becoming innovatively oriented in order to take away its competitiveness and enter global markets.

Analysis of latest research and publications

Research of the innovative capacity of Ukrainian business is carried out rather half-heartedly and there are few publications in this direction, and against the background of the large-scale invasion of the Russian Federation, this subject matter has almost disappeared. However, general studies of economic competitiveness ratings and surveys of entrepreneurs provide a lot of information for analysis. Razumkov Institute with the assistance of the Konrad Adenauer Foundation Representation Office in Ukraine [1], Global Innovation Index 2022 [2], World Bank, World Development Indicators Database [3], Inflation Reports of the NBU [4], World Economic Forum 2023 Reports [11] and others provide a lot of analytical information, including on Ukraine. A very interesting analytical presentation by Yevhen Angel provides a picture of the business climate of one region in comparison with the entire economy of Ukraine [5], reports of global trade activity [9], etc. But the priority of innovative activity of Ukrainian entrepreneurship needs more attention and strategic initiatives on the part of the state, especially against the background of war.

Objective formation

The purpose of the article is to analyze the main problems of the development of entrepreneurship in Ukraine under

conditions of war and outline the priorities on the path to innovative restructuring of domestic business.

Presentation of the main material of the research

A comprehensive program of post-war reconstruction of Ukraine and the development of domestic business should be based on the creation of an innovative economy that has mechanisms for integration into modern developed markets. The elements of this program should be implemented by the Ukrainian state rather quickly, even under conditions of the ongoing aggression of the Russian Federation. If this is not the case, the reconstruction strategy can turn into a path that will lead the country to long-term impoverishment with acute social problems. Unfortunately, the war that has been going on since 2014 slowed down the technological development of the Ukrainian economy, and the large-scale invasion of the Russian Federation almost stopped the scientific and technical movement, which distanced Ukraine from the leading countries within this framework. Evidence of this are the world rankings.

The Global Innovation Index (GII) 2022, which tracks the latest global innovation trends against the backdrop of today's challenges, reveals the world's most innovative economies by assessing the innovation performance of approximately 132 economies, highlighting innovation strengths and weaknesses. In this rating, Ukraine ranked 57th, dropping 8 places over the year (Fig. 1).

GIIYR	GII	Innovation inputs	Innovation outputs
2020	45	71	37
2021	49	76	37
2022	57	75	48

Fig.1 – GII Ratings of Ukraine for 2020–2022 [2]

As is obvious, in 2022 Ukraine rather invested in innovation than received innovative products, the domestic economy ranked 75th in terms of the volume of innovations involved, which is higher than last year, but lower than in 2020.

Ukraine ranks 4th among 36 countries of the world with below-average domestic income and 34th among 39 European economies. However, a rather interesting indicator of innovative performance in this study shows some optimism. The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score) (Fig. 2). The trend line indicates the expected innovative productivity according to the level of income. Economies above the trend line are performing better than expected, while those below are performing below expectations. Compared to GDP, Ukraine's indicators exceed expectations of its level of development.

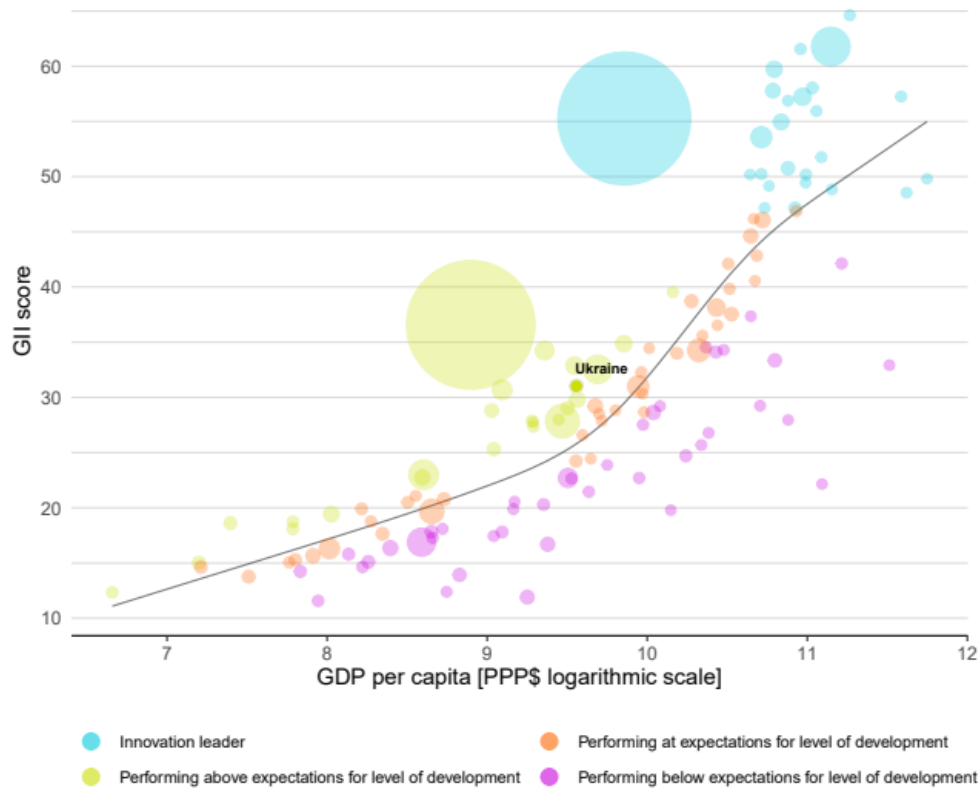


Fig. 2 – Positive relationship between innovation and development [2]

The diagram (Fig. 3) shows the relationship between innovative contributions and innovative results. Economies above the limit actually turn expensive investments into even greater innovation and higher quality products. Ukraine produces more innovative products compared to the level of innovative investments.

In reference to the overall entrepreneurial potential, Ukraine’s indicators exceed the average level of income for the group of countries with incomes below the average according to six main principles, namely: institutions; human capital and research; infrastructure; business sophistication; knowledge and implementation

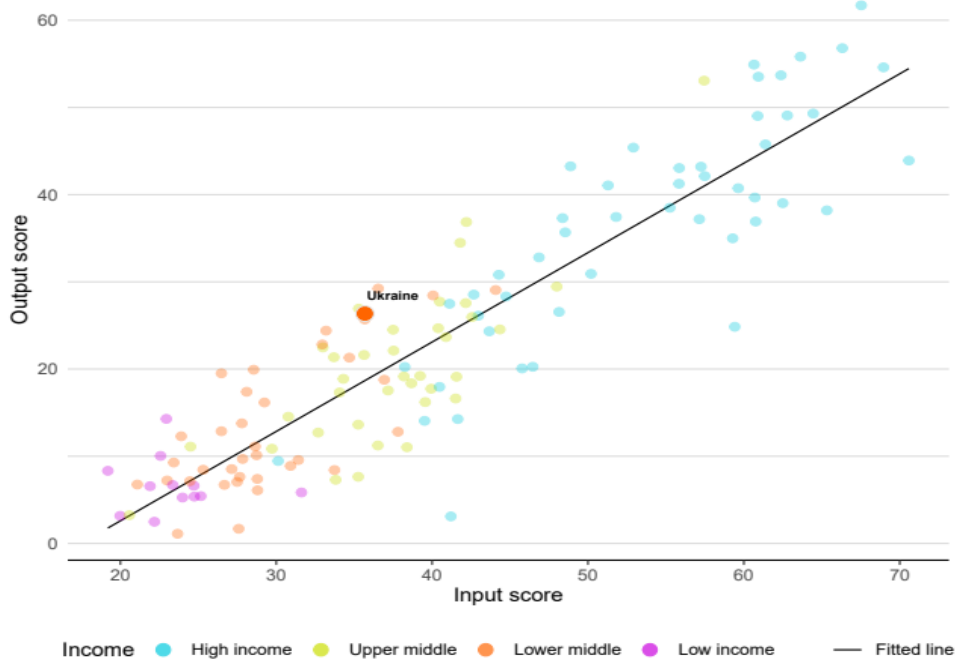


Fig. 3 – Innovative investments for productivity [2]

technologies and creative results. But if we look at Ukraine’s rank among the countries of the European Union, then, unfortunately, Ukraine’s indicators are lower than the average for the region at all GII levels.

When analyzing the potential of an entrepreneurial initiative, an important indicator can be the percentage of the self-employed population in the total employable population. Data from the World Bank give figures including 2021. Disappointingly, 2022 analytics for Ukraine have not yet been published. But the trends are clear. The share of family and self-employed workers as a percentage of total employment was 14.25% in 2020 and 13.93% in 2021. [3] Salaried workers, on the other hand, are those who hold types of work defined as “paid work” where workers have explicit (written or verbal) or implicit employment contracts that give them the basic remuneration, which does not directly depend on the income of the division for which they work, is 84.95% in 2020 and 85.28% in 2021. [3]. Relative unemployment is 9.48% and 9.83%. Based on the official report of the National Bank of Ukraine in the first quarter of 2023 the unemployment rate was 20% [4]. According to unofficial data, this indicator is much higher. It should be noted that the labor potential, which lost its place of work in connection with the armed hostilities of the aggressor, did not flow into the entrepreneurial private sector and did not replenish the ranks of the self-employed population. Why is this happening, if we take into account the fact that the overall demand for an innovative product has remained rather specific.

The results of the July monthly survey of business managers “Ukrainian Business During the War”, conducted

by the Institute of Economic Research and Political Consultations, showed an increase in pessimistic attitudes (Fig. 4), emphasizing that:

- security remains the main obstacle for the development of enterprises, which directly affects investment attractiveness;
- 63% of entrepreneurs (59% surveyed in May) consider the permanent and uncontrolled increase in prices for raw materials and goods a threat to business;
- difficulties with logistics 43% (38% in May);
- the probability of unforeseen problems with energy and water supply – 38% of entrepreneurs complained about this;
- labor shortage became more relevant and moved from 6th to 4th place;
- “Disruption of supply chains” was also included into the top five obstacles.

As for illegal and unfair practices, the majority of respondents did not name any of them as widespread. At the same time, unfair court decisions (2.9 points) and corruption in local authorities (2.8 points) were called more common, and raidership and property seizure (2 points) were the least common (Fig. 5).

The studies carried out demonstrate a change in priorities in the business environment. At the beginning of the spring of 2023, only 3% of businessmen considered technological backwardness to be an obstacle (Fig. 6). Instead, the adverse political situation (including war) and low demand were cited as the main problems.

The issue of outdated technologies in Ukrainian entrepreneurship traditionally occupied the lowest levels of management priorities. Business considered

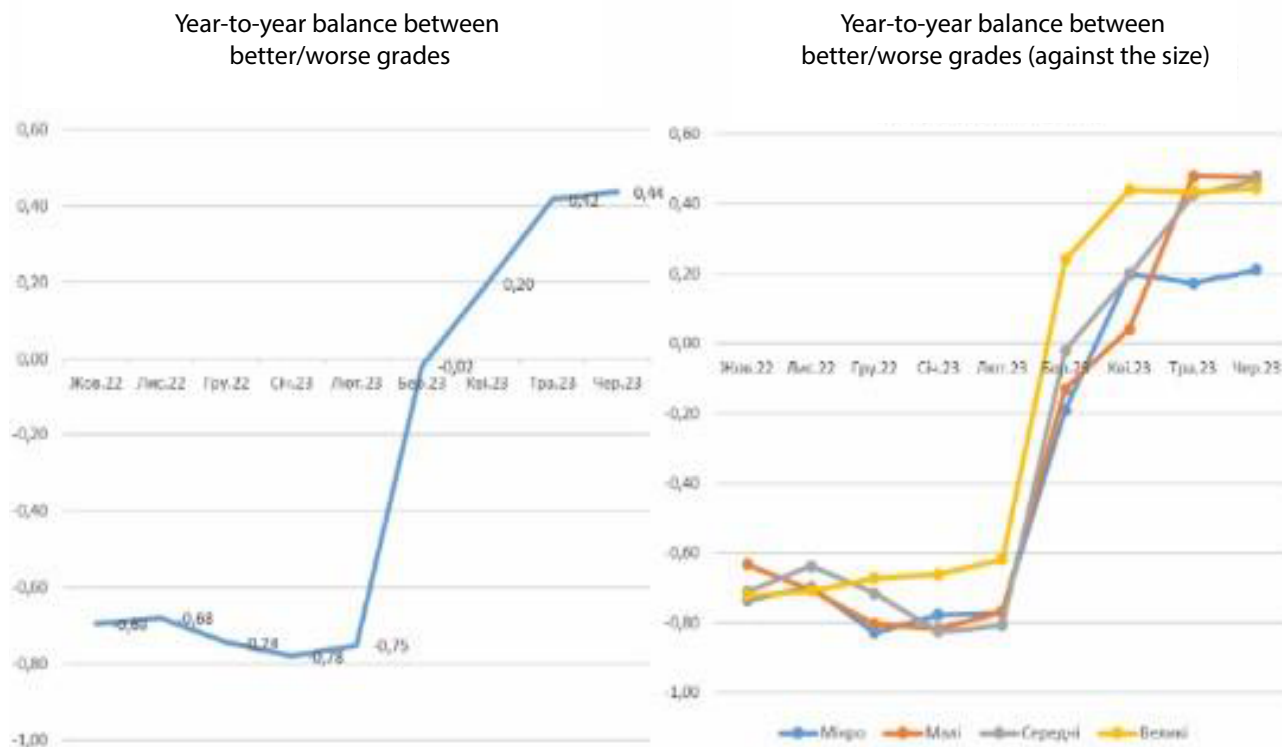


Fig. 4 – Results of the July survey of enterprise managers “Ukrainian Business During the War” [5]

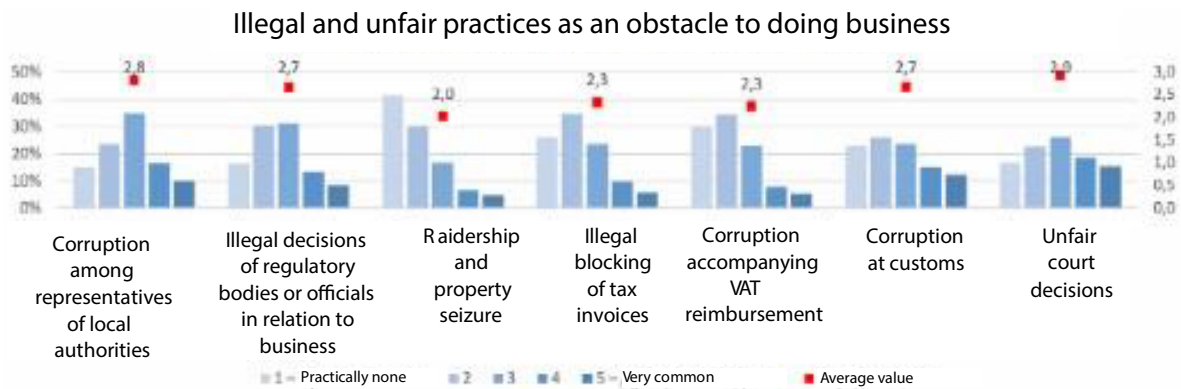


Fig. 5 – Results of the July survey of enterprise managers “Ukrainian Business During the War” [5]

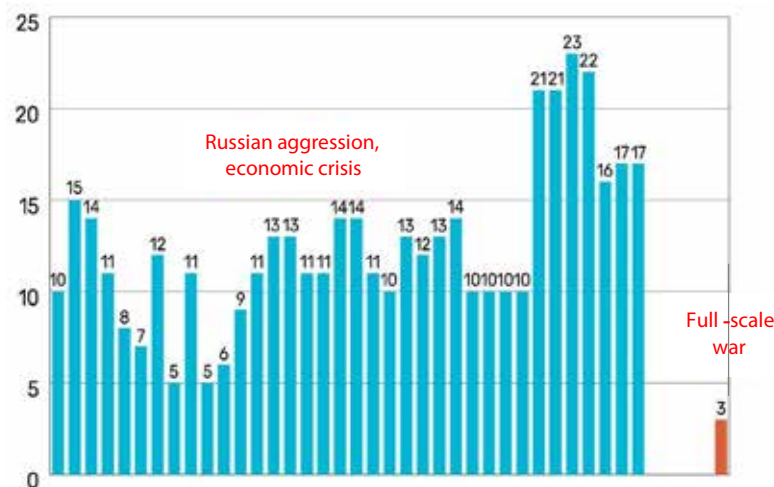


Fig. 6 – Outdated technologies as an obstacle for business. July survey of enterprise managers “Ukrainian Business During the War” [5]

and now considers as its main task to survive in any way. And the latest technologies fall out of the focus of attention of the heads of enterprises. However, despite the destructive aggression of the Russian Federation, most entrepreneurs declare their desire and plans to introduce innovative technologies. According to surveys, almost a quarter of businessmen consider the development and implementation of the latest technological cycles to improve the quality of products and services to be one of the first priority measures. For 46% of managers, innovations are acceptable partly within the limits of competitive advantages. Unfortunately, a third of businessmen (31%) are not at all interested in innovation. Attention to innovative activity is proportional to the size of the business. The following rule applies here: the larger the enterprise, the greater the chances of attracting investment in technology development. Only 13% of small businesses are interested in the latest developments, and this is a big mistake of a small private business, which loses competitiveness and opportunities for expansion and, even, promotion to global markets.

If we look at the interest in innovations in the sector, we will also see the consequences of a certain philosophy of business managers in different areas (Fig. 7).

Apparently, the latest technologies are not interesting for half of the manufacturers of building materials. At the same time, this industry is the most crisis-prone and problematic in Ukraine, even despite high consumer demand. A quarter of machine builders also show no interest in innovation, which drags Ukraine to the periphery of developed economies.

Conclusions

Ukrainian business should pay more attention to the involvement of the latest technologies in its production processes. And it is right in a time of bitter trials, generated by the war of the Russian Federation against Ukraine, that innovations can become the key to getting out of the crisis and a way to increase competitiveness in the domestic market, as well as to promote to foreign markets. State and non-state institutions should take an active part in promoting the development of innovative strategies of enterprises. Innovation should become the main strategy of both the state and entrepreneurship in all spheres of production. The reconstruction of Ukraine should take place on the basis of the latest philosophy of industrial and entrepreneurial activity. Only then will Ukraine have a real chance to join the ranks of the world's developed economies.

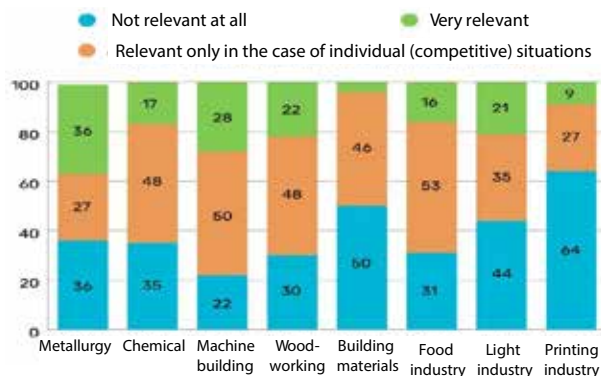


Fig. 7 – Relevance of innovations depending on industry. July survey of enterprise managers “Ukrainian Business During the War” [5]

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