

NEW INVESTMENT OPPORTUNITIES IN PHARMACEUTICAL INDUSTRY OF UKRAINE DUE TO THE SPREAD OF CORONAVIRUS DISEASE (COVID-19)

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Abstract. *The subject* of this article is the state of investment attractiveness of the pharmaceutical industry of Ukraine in connection with the spread of coronavirus disease COVID-19. *Methodology.* The study mainly used systemic and logical approaches. At the same time, the following scientific methods were used in the research process: 1) analysis – the risks and benefits of investing in the pharmaceutical industry in Ukraine are studied, in particular, the main factors that may affect its further development are identified; 2) deduction – the general state of operation of the pharmaceutical industry and important details that form a general picture of the industry are indicated; 3) induction – considerable attention has been paid to some important steps necessary for the further development of the pharmaceutical industry; 4) generalization – common features of the processes occurring at the national and supranational level in the functioning of the pharmaceutical industry have been established; 5) others. *The aim* of this article is to identify new opportunities, prospects and risks for investment in the pharmaceutical industry of Ukraine in connection with the spread of coronavirus disease COVID-19 (hereinafter COVID-19). *The results of the study* demonstrate the significant potential of the pharmaceutical industry in Ukraine for its further transformation: high employment in the industry, a large number of production facilities, compliance with international standards, etc. *Conclusion.* The pharmaceutical industry of Ukraine is one of the most profitable sectors of the national economy and has a leading position on the index of capital investment. Despite the economic crisis, the industry's focus on innovation is driving growth, particularly in the pharmaceutical market. 48% of pharmaceutical manufacturers pay special attention to the study of new technologies and equipment. For further development of the domestic pharmaceutical industry, Ukraine needs an effective strategy for implementing the stages of vaccine production on its territory due to the emergence of new diseases. Production of such vaccines will help support Ukraine's participation in competition in the promising segment of the global pharmaceutical market. In order to attract investment in the development of this area, the Ukrainian government needs to ensure the effective functioning of public authorities and, in particular, to ensure the predictability of the economic and political situation. Given the positive experience of foreign countries (USA, India and Kazakhstan) in cooperation in the format of public-private partnerships (hereinafter – PPP), the introduction and further use of this mechanism of cooperation in the pharmaceutical industry of Ukraine will have a positive impact on its investment attractiveness. Effective actions of the government of Ukraine, aimed at improving the welfare of citizens will serve as a guarantee of preventing the growth of counterfeit pharmaceutical products on the domestic market.

Key words: pharmaceutical industry, public-private partnership, investment attractiveness, investment risks, national economy, COVID-19.

JEL Classification: E29, L60

1. Introduction

By its nature, investment is a key tool for increasing the profitability of the national economy and, accordingly, increasing the purchasing power of the population. The volume of investment financial injections into the national economy is influenced by the level of investment attractiveness of the country.

Investment attractiveness is determined by the political situation in the country, the effectiveness of government institutions, the overall macroeconomic situation and so on. The application of quarantine measures at the beginning of 2020 had a negative impact on the functioning of national economies in the world, in particular, on the national economy

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of Ukraine. Currently, the pharmaceutical industry is one of the most important industries in Ukraine, characterized by knowledge-intensive, developed cooperation and sufficiently resistant to crises. Further out-breaks of COVID-19 and the emergence of its new strains define the pharmaceutical industry in Ukraine as the basis of national security and, therefore, increase its investment attractiveness. At the same time, the deterioration of the overall macroeconomic stability of the national economy of Ukraine may have a negative impact on the volume of financing of investment projects in the domestic pharmaceutical industry (Krupiak, 2018).

Prospects for the development of the pharmaceutical industry in Ukraine were studied by the following Ukrainian scientists: Krupiak I. Y., Krupiak L. B., Borushchak I., Vitiuk A. V., Trachenko K. R., Litvinova O. V., Posylkina O. V., Kovinko O. M., Stakhova A. I., Vovk A. P., as well as public figures and state officials Bega V., and Radutskyi M. The above-mentioned persons have examined in detail the issues related to financial characteristics of the pharmaceutical industry, trends in the pharmaceutical industry and the market, opportunities for vaccine production in Ukraine, the peculiarities of national legislation on medicines, the possibility of implementing PPP mechanism in the pharmaceutical industry, especially its investment attractiveness, etc.

Foreign experts and scientists Fred D. Ledley, M.D., Sarah Shonka McCoy, Assistant Professor, Gregory Vaughan, Ph.D., Ekaterina Galkina Cleary, Ph.D. have conducted the study on the profitability of large pharmaceutical companies compared to other large companies; Keith Speights identified, in particular, the feasibility and risks of investing in securities of pharmaceutical companies. At the same time, both domestic and foreign experts agree that there is significant scientific and economic potential in the pharmaceutical industry.

2. Investment attractiveness of the pharmaceutical industry in modern conditions

The pharmaceutical industry generates more than \$1.2 trillion annually in national economies around the world. The stable and efficient functioning of this industry is a guarantee of a better quality of life for many citizens (Speights, 2021). Success in the research area related to the development of new pharmaceuticals plays a key role in determining the winners and losers in the pharmaceutical business, especially in creating new product niches for such businesses (PwC Ukraine, 2021). The pharmaceutical industry is one of the most profitable sectors of the global economy. A study of the earnings of large companies in the S&P 500 (35 pharmaceutical companies and 357 companies in other industries)

found that pharmaceutical companies had significantly higher average net income than companies in other industries from 2000–2018 (13.8% vs. 7.7%) (Fred D. Ledley et al., 2020). At the same time, the pharmaceutical industry belongs to knowledge-intensive industries, according to the OECD classification. This industry is the world leader in gross value added per employee. About 1/5 of research and development costs are incurred in this industry (Borushchak, 2017). Today, the international pharmaceutical market shows signs of further growth in pharmaceutical production and investment in research organizations (R&D centers) due to the emergence and proliferation of new strains of COVID-19. In 2019, the European pharmaceutical industry funded 37.7 million worth of researches. Meanwhile, the average annual growth rate for research spending between 2016 and 2020 was 3.1% for Europe and 7.6% for the United States (EFPIA, 2021). The need to develop vaccines against the spread of COVID-19 is a key factor in significantly increasing investment in the pharmaceutical industry. The development of a negative scenario of the epidemic situation in the world due to the rapid spread of COVID-19 prompted international financial institutions to fund projects related to vaccine development. The European Investment Bank continues to enter into loan agreements with international pharmaceutical companies to develop new vaccines against COVID-19. At the same time, throughout the COVID-19 pandemic, this international financial institution has provided significant support for the development of innovations to reduce the impact of the pandemic (Ukrinform, 2021).

The pharmaceutical industry is of great importance in the economy of Ukraine. It is a fairly knowledge-intensive industry with well-developed cooperation. The Ukrainian pharmaceutical industry produces about 1,400 (47%) of the 3,000 medicines on the domestic market. Pharmaceutical companies make their own products in various forms (pills, powder, liquid, etc.). The main groups of pharmaceutical products include: cardiovascular drugs, vitamins, antibiotics, medical cosmetics, dietary supplements, etc. (Vitiuk et al., 2018). At the same time, not a single vaccine is produced in Ukraine today due to the lack of appropriate production facilities and the necessary financial resources. Ukraine's limited state budget does not allow it to spend an average of \$1 billion to \$8 billion on vaccine production (Beha, 2020). The dissemination of COVID-19 reminded the world community of the importance of the effective functioning of the pharmaceutical industry. In particular, it marked the beginning of a new level of relationship between the international financial institutions, the government and the pharmaceutical industry.

The Ukrainian pharmaceutical industry is quite resistant to crisis situations and shows successful results, even during the period of strict quarantine measures related to COVID-19. For example, in 2020, the volume of pharmaceutical sales through pharmacy chains increased by 8% compared with 2019. At the same time, despite the economic crisis, the growth of the pharmaceutical market is due to the industry's focus on innovation. 48% of pharmaceutical manufacturers focus on exploring new technologies and equipment. For example, a domestic pharmaceutical company Darnitsa financed innovative projects worth 291 million UAH. A significant portion of these funds was directed toward industrial and digital transformation (Mind UA, 2021). Biopharma, a Ukrainian pharmaceutical company specializing in the development and production of high-tech drugs, has invested \$7 million in the construction of a new office and laboratory complex in 2020. In 2020, the pharmaceutical industry of Ukraine was the leader among the sectors of the national economy in terms of capital investment. In the first quarter of 2020 alone, investments of 372 million UAH were attracted in this sector. Pharmaceutical manufacturing received a 72% increase in investment in 2019. Only the energy industry performed better during this period (UFU-TURE, 2020). Due to strong demand for pharmaceutical products from domestic companies, cumulative compound annual growth rate (CAGR) was 11.5% between 2017 and 2020; capital investment increased by an average of 16% (UkraineInvest, 2020). The industry employs over 350,000 pharmacists (Vynnytsia Regional Employment Center, 2021), revenues to the state budget in taxes and mandatory payments (about 2.5 billion UAH), a significant number of production facilities (113 pharmaceutical plants) that meet international quality standards (Radutskyi, 2020), provide significant investment potential for the Ukrainian pharmaceutical industry. Today, one of the most promising areas for investment in this industry is the development and production of vaccines against COVID-19, which leads to fierce competition between the leading pharmaceutical corporations in this market segment.

The development and production of such vaccines requires not only research capabilities, but also significant financial investments. Investors give preference to financing vaccine development and production by companies that already have high quality and safe vaccines in their product portfolio. Due to the lack of successful experience in the production of vaccines in Ukraine, it is not the right time now for attracting funds from international financial institutions and private investors into such projects. Unfortunately, due to the lack of vaccine production capacity and, most importantly, due to the lack of

experience, Ukraine has already lost the opportunity to produce vaccines developed by leading pharmaceutical corporations on its territory. The production of such vaccines will allow Ukraine not only to save budgetary funds, but also to increase budget revenues through exports to other countries.

3. Prospects for investment projects in the pharmaceutical industry of Ukraine

The world community may be confronted in the future with new manifestations of new diseases, so the production of vaccines in a given country will be an indication of the high development of its pharmaceutical industry. Thus, the government of Ukraine must immediately develop a strategy for the training and retraining of relevant specialists in domestic educational institutions and provide the necessary support to its own industry for the production of vaccines in Ukraine.

The development of the Ukrainian economy requires significant financing. Given Ukraine's budgetary constraints, the Ukrainian government needs to continue a constructive dialogue with private investors, including international financial institutions. Today it is inexpedient to raise the issue of privatization of state strategic facilities, and it is better to develop flexible approaches to cooperation within the framework of PPP: concessions, joint ownership, property management and so on.

So far, PPP cooperation in many countries has addressed issues related to improved governance and budgetary constraints. Recently, there has been a significant increase in capital expenditures by pharmaceutical companies, including those associated with the development of vaccines to control the spread of COVID-19. At the same time, the pharmaceutical industry has grown by 6-7% in recent decades, with the gross volume of pharmaceutical products sold on the world market reaching more than \$1 trillion. In connection with large-scale economic challenges, conditions are created for effective dialogue between the leading players in the pharmaceutical industry and public authorities.

The global experience of effective cooperation within the framework of PPP in the pharmaceutical industry is very significant. For example, the use of PPP mechanisms in India had a positive impact on the increase of the pharmaceutical market to \$30 billion (+400%) in 2005–2015. Implementation of more than 20 PPP projects between 2008 and 2015 has increased the pharmaceutical market of the Republic of Kazakhstan by almost 2.5 times. Today, cooperation in the framework of PPP is of interest also in the U.S. in the direction of accelerating the development and market promotion of new drugs that are critical for the treatment of common diseases.

According to global practice, PPP cooperation in the pharmaceutical industry is usually implemented in global and socially significant projects involving many stakeholders, such as the government, industry representatives, non-profit NGOs, charitable foundations, etc.

The distribution of financial burdens, risks and a transparent distribution of obligations of the parties cooperating in PPP investment projects makes such projects investment attractive and viable.

Although the development of PPP cooperation in the pharmaceutical industry today is very promising, there is little such cooperation in Ukraine compared to foreign countries. Cooperation within the framework of PPP may be appropriate to address issues related to the development of new medicines, reforming the domestic health care system, improving the quality of medical services and so on. The implementation in Ukraine of investment projects worth more than \$ 1 billion using the mechanism of cooperation PPP can have a positive impact on the feasibility and economic benefits of financing projects in the domestic pharmaceutical industry for potential investors (Litvinova et al., 2019).

4. Investment risks in the pharmaceutical industry of Ukraine in the format of PPP

In order to implement new projects within the framework of PPP cooperation in the pharmaceutical industry it is necessary to constantly work on increasing its investment attractiveness. Such attractiveness is determined, above all, by the transparent "rules of the game" and a guarantee for the investor of the possibility of achieving the expected goal in the investment project. Assessment of investment attractiveness requires a comprehensive approach to the study of the overall state of the national economy, the potential of the region, in particular the characteristics of the domestic pharmaceutical industry. At the same time, the stable functioning of the industry during economic crises and the possibility of self-financing of the industry in such crises is one of the key "benchmarks" for making the final decision on cooperation in the PPP format. When making such a decision on the advisability of participation in investment projects related to the reform of the pharmaceutical industry, including in the PPP format, all possible risks should be taken into account: technical and technological potential; established requirements for product quality; availability of raw materials, dependence on other sectors of the national and/or world economy, the need for large amounts of financial resources, etc. The lack of a clear investment strategy and the novelty of proposed solutions for the development of the pharmaceutical industry are also significant

investment risks (Posylkina, 2002). Early anticipation and possible avoidance of the above risks will have a positive impact on the payback period of investment projects and the level of their profitability.

The manufacturing sector of the pharmaceutical industry is quite profitable and reaches about 600%. Such high profitability may be the reason for production of pharmaceutical products not registered in Ukraine. According to world practice, the largest number of counterfeit copies of pharmaceutical products is found in the high price segment. In order to avoid the growth of counterfeit products on the domestic pharmaceutical market, the government of Ukraine should make significant efforts to gradually increase the purchasing power of citizens (Kovinko et al., 2017).

Today it is impossible to determine the adequate share of shadow economy in the pharmaceutical industry of Ukraine due to its special nature. There are many statistical materials on the distribution of counterfeit products in Ukraine. However, most of these materials do not contain sufficiently substantiated evidence, in particular, the methodology of calculation of such statistics (Kulytskyi, 2019).

The main goal of any investor is to receive the expected benefits and guarantee the integrity and inviolability of their assets. The state must be such a guarantor and make every effort to minimize the risks that may arise in the process of implementing investment projects.

5. Conclusions

The pharmaceutical industry is one of the most profitable sectors of the global economy, in particular, generating more than \$1.2 trillion annually. The OECF categorizes the pharmaceutical industry as a knowledge-intensive industry and is the world leader in gross value added per employee. Today, there are signs of further growth in pharmaceutical production and investment in research organizations (R&D centers) due to the emergence and proliferation of new strains of COVID-19 on the international pharmaceutical market.

The effective functioning of state institutions, especially the predictable economic and political situation in the country, is the key to successful investment in the pharmaceutical industry. International financial institutions are actively involved in financing investment projects related to the development of vaccines in connection with the spread of COVID-19. The pharmaceutical industry in Ukraine occupies a worthy place in the national economy, in particular, manufacturing companies provide about 1,400 (47%) of the 3,000 drugs available on the Ukrainian domestic market. The need for new vaccines due to the spread of new

strains of the COVID-19 virus is a key factor in the significant increase in investment in the pharmaceutical industry. Today Ukraine does not produce a single vaccine, so Ukraine cannot compete in this promising segment of the global pharmaceutical market. The limited capacity of Ukraine's state budget does not allow it to spend an average of \$1 billion to \$8 billion on vaccine production. Ukraine needs an effective strategy and the support of foreign investors

to introduce on its territory the production of a vaccine capable of containing the spread of new diseases. An important direction in the implementation of this strategy is fruitful cooperation in the framework of PPP. Cooperation in the framework of PPP in the pharmaceutical sector in Ukraine is almost non-existent, despite the positive experience of using this mechanism of cooperation in foreign countries.

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