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Implementation of the National Reindustrialization Policy in the Countries of the Eurasian Economic Union[1, 2]

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Abstract

The current stage of development of Eurasian Economic Union (EAEU) countries indicates that these states are being forced not only to reindustrialize, but to industrialize their economies almost from scratch, since their industries, for known political reasons, were completely destroyed or are technologically obsolete. This article investigates innovative factors in the development of reindustrialization processes in the countries of the EAEU based on the development and implementation of targeted national policy. The study puts forward a hypothesis about the existence of a dependence between the rates of innovative development of countries, on the one hand, and foreign direct investment and research and development (R&D) expenditures, as well as trends in industrial production development, on the other, as a summary indicator of the reindustrialization of the national economy. To confirm the hypothesis, the following methods were used: statistical analysis, which allowed the primary processing of data that describe the dynamics of indicators of innovative development of countries and its factors, and a comparative analysis of the innovative development of the countries of the EAEU, which constitute the object of this study. The first part provides a sequential analysis of changes in specific indicators describing the innovative development of the countries under consideration, as well as factors that, according to the hypothesis, have a significant impact on it, thereby enabling the evaluation of the general trends in the dynamics of innovative processes within the selected object of this study. In the second part,

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through the establishment of correlations between the factors and results of the innovative development of countries, measures are proposed to improve the national policy of innovative development and reindustrialization.

Keywords: development indicators; reindustrialization; government and corporate investment; regional integration

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Introduction

Globally, experience shows that the pace and scale of economic development of countries is influenced by a wide range of environmental, institutional, financial, investment, and other factors, which is reflected in a fairly large number of publications that can be conditionally divided into two groups. The first is based on general conclusions; the second – on the statistical dependencies between the respective indicators. Therewith, the general methodological problems are, first, the substantiation of indicators of economic development of countries and, second, the identification of the degree of influence of these factors, which can both accelerate and slow the processes occurring in national economies or destabilize the situation.

The correlation between economic development and the analyzed factors is much more complicated than is conventionally presented in theory, which is conditioned by the following circumstances. First, the impact of factors is mediated by the simultaneous presence of a wide range of conditions associated with reindustrialization, which can change the direction and nature of the ongoing processes. Second, among the conditions that are often overlooked, the institutions existing in a particular country play an important role [Levin, 2010], including regarding the effectiveness of the economic policy implemented by the government. If past experience is any guide, the latter can significantly impact the effectiveness of programmes on environmental protection and social orientation. The strategy for further socio-economic development of the Eurasian Economic Union (EAEU) countries is directly related to the reindustrialization of their economies [Blyakhman, 2014]. First, these countries have different potentials and, as ecological-socio-economic systems, are at different stages of their development and reindustrialization. Second, they use various reindustrialization models, from the restoration of previously existing industries to the deep modernization of industries on an innovative basis, as well as the creation of fundamentally new industries, which requires attracting considerable investment.

The specific features of the current stage of development of the world economy are the establishment of a "new economy" based on the constant generation not only of product and technological innovations, but also organizational, social, and institutional innovations, among others. In this regard, there are two main approaches to the impact of reindustrialization on the development of ecological-socio-economic systems: first, a technocratic approach, in which reindustrialization is considered as a means of increasing gross domestic product (GDP) by increasing the efficiency of the economy; and second, a socio-economic approach, in which reindustrialization is considered with regard for the entire volume of social, economic, and environmental consequences for the development of the country at large.

The technocratic version assumes the subordination of the socio-economic development of the national economy to the interests of the real sector of the economy and the industrial development of natural resources. Industrial development in this direction will largely depend on the system of division of labour in the economic space of the EAEU countries. The second way is the subordination of the development of economic sectors, including the development of natural resources, to the strategic goals of ensuring sustainable ecological, socio-economic development of countries. The choice in this direction requires strengthening the role of the state in coordinating actions and solving issues related to the modernization of existing production, and the development and processing of the country's natural resources. The high degree of uncertainty in the socio-economic development of the national economies of the EAEU countries necessitates the identification of criteria or boundaries of their sustainable development, which should be understood as a set of conditions that ensure normal life, material well-being of the population, and the availability of spiritual and cultural values.

The processes of state regulation of the socio-economic consequences of reindustrialization must be dynamic and flexible. In all countries with an established market economy, the concepts, goals, objectives, priorities, and mechanisms of industrial development have changed with economic development. Reindustrialization is impossible without strengthening the role of the state based on a comprehensively substantiated socio-economic policy in relation to specific industrial complexes and industries. At the same time, it must be taken into account that socio-economic consequences are manifested primarily at the micro level. The construction of new, and the reconstruction of existing, enterprises should include a comprehensive analysis of the environmental, social, and economic consequences that arise at all levels, in individual regions, states, and in the EAEU in general.

Literature Review

Currently, the study of this subject area primarily investigates the general issues of reindustrialization, including imperatives, opportunities, and problems, as well as the impact of global factors and risks on these processes. The theoretical foundations for highlighting the concepts of reindustrialization were set forth in articles by A. E. Stevenson [1981] and R. Rothwell [1985], as well as in specialized studies of scientific organizations [National Research Council, 1981], developed as guidelines for understanding the terminology. The study by R. Rothwell [1985] examined the issue of the close, strong correlation of reindustrialization with the development of science and technology and determined the priority of the development of the industry precisely from the standpoint of introducing innovation and transition to new technological processes, which are based on the solutions of national science. Later, the development of theoretical aspects of the reindustrialization issue became controversial with regard to clarification of the terminology of the process and various verbal subtleties in the definitions of reindustrialization, which was reflected in the study by P. Raggi [2013].

At the present stage, instead of theoretical questions, attention has focused on the study of reindustrialization of national economies through the identification of readiness, priorities, resource provision, and the estimation of the impact on national competitiveness. In this aspect, studies by W. C. Shih [2013] and L. Panza [2014] deserve special mention, in which the key features of the reindustrialization of the United States and the Middle East were considered; comparison of the research data revealed a clear dependence of the reindustrialization process on the level of development of countries. If, for developed countries, reindustrialization acts as an opportunity to shift to a new technological level, then, for developing countries, an incorrectly developed and implemented reindustrialization policy can lead to deindustrialization and a decrease in the technological level.

A special mention should also be given to various studies of Eastern European and post-Soviet countries that considered the processes of reindustrialization of national economies based on accumulated world experience and assessed the priorities and possibilities of reindustrialization at the present stage. Studies by S. Konstantinova and A. Konarev [2015] considered the features and prospects of reindustrialization based on the national models of the economies of post-socialist countries. The authors assessed the role and importance of reindustrialization for the sustainable development of Bulgarian society, and also proposed national strategies and instruments for the development of industrial production. A study by A. N. Zakharov [2018] demonstrated the most important aspects of the reindustrialization of the world economy based on a comparative analysis of the strategies of reindustrialization of the U.S., Canada and Australia. The correlation of the main global trend was considered, that is, the transition to a digital economy and the processes of reindustrialization within the framework of the fourth industrial revolution. This experience of the reindustrialization of developed countries was considered in relation to the possibility of its application in the Russian context.

A study by N. A. Nevskaya et al. [2018] considered the transformation of the system of indicators of national economic policy aimed at stimulating the development of economic potential in order to increase the competitiveness of the national economy with a priority on reindustrialization of the Russian economy. It should be noted that the countries of the EAEU, including Russia and Kazakhstan, have identified reindustrialization on a new technological basis as the main priority for industrial development. Therefore, not only are the features of the reindustrialization process being investigated, but also its influence on the main economic and social processes; there are currently many studies of this nature. Among them is the study by A. G. Shelomentsev et al. [2017] that raised issues of the regional level of reindustrialization in EAEU countries from the standpoint of a thorough analysis of the issues of modelling the dynamic development of regional systems as an inseparable triad – ecology-society-economy – in the context of various stages of the reindustrialization of EAEU countries. This study also raised questions as to the further investigation of reindustrialization processes in EAEU countries, since the process is long-term and requires a well-developed state and supranational policy.

Among Kazakhstani authors, the study by Ye. B. Aimagambetov, D. Stefanov and N. Kuttybaevaet [2016] is notable; the authors considered the possibilities of reindustrialization of the national economy from the standpoint of ensuring its competitiveness. Evaluating the factors of ensuring competitiveness, they noted the primary role of national industry and the business environment in reindustrialization processes. These processes are directly related to the development of the sphere of industrial production, which is briefly discussed in all of the studies considered herein, but there are studies in which reindustrialization is considered in relation to the development of rural areas. The study by G. V. Zhdan, I. V. Shchetinina and Yu. P. Voronov [2017] substantiated the necessity and analyzed the problems of reindustrialization of the rural economy in modern conditions. As an example, the Novosibirsk region of Russia was chosen, in which a target programme for reindustrialization of the regional economy is being implemented. The authors, based on the study of domestic and foreign experience, analysis of statistical data, and established practice, proposed ways to overcome the reindustrialization issues of the rural economy at various levels of government, which is of particular interest to scholars and practitioners involved in reindustrialization.

Continuing the review of studies on reindustrialization in EAEU countries, the opinion of S. D. Bodrunov [2015; 2019] should be noted; Bodrunov considered the simultaneous solution of large-scale issues in several interrelated areas as the main measure for reindustrialization: first, the restoration or modernization of production facilities that were lost or became obsolete during deindustrialization; second, the implementation of programmes and projects of inno-

vative industrialization; and third, the transition to the stage of new industrial development, considering the specifics and technological challenges of the industry in the coming decades.

Within the framework of these proposed development aspects, the following reindustrialization determinants can be identified, which, in turn, condition its long-term trends:

– government and corporate investments, the scale of which should significantly increase and reorient toward reindustrialization;
– innovations, the effectiveness of which is determined, among other things, by state-generated demand;
– highly qualified personnel, requiring an increase in investment in human capital and an active personnel policy;
– technologies that are primarily used in mechanical engineering, since the state of the industry is directly dependent on the state of the machine-building complex, which is the main factor in the development of all types of activity;
– incentivization of entrepreneurs, which requires an adequate national economic policy, creation of support systems for high-tech business, and reduction of administrative barriers [Davletbayeva, Taubayev, Kuttybai, 2018].

Therewith, another feature of the reindustrialization of EAEU countries, and primarily Russia and Kazakhstan, is that at the first stage, the financial component of reindustrialization on a new innovative basis will be provided by the extractive sector of the economy. But this does not mean that countries should deliberately preserve the raw material structure of the economy at the risk of remaining haunted by the so-called commodity curse [Polterovich, Popov, Tonis, 2007].

Materials and Methods

Considering the innovative basis of reindustrialization, it is necessary to estimate the factors of innovative development in the EAEU countries. As noted above, the pace and scale of economic development of countries is influenced by a wide range of environmental, institutional, financial, investment, and other factors, an insight that is reflected in a fairly large number of publications [Hottenrott, Lawson, 2017; Slabbert, 2010]. These can be conditionally divided into two groups – those based on general conclusions, and those based on the statistical dependencies between the corresponding indicators. Therewith, common methodological problems involve the substantiation of indicators describing the country's innovative development and the definition of indicators that correctly describe the relevant factors influencing the innovative development of the analyzed countries. The countries of the EAEU – Russia, Kazakhstan, Kyrgyzstan, Belarus and Armenia – were selected as the objects of this study. The main factors for which indicators were collected and summarized were identified using World Bank [2020] data: the share of industrial gross value added (GVA) in GDP, foreign direct investment, high-tech exports (in thousands of dollars and as a percentage of industrial exports), financing of research costs and development (as a percentage of GDP), and the number of resident patent applications. It is not possible to take the entire range of factors into consideration due to its considerable scope; thus, only those for which the connection with innovative development is considered obvious and undoubted were analyzed. The study put forward a hypothesis about the existence of a dependence between the rates of innovative development of countries, on the one hand, and foreign direct investment, research and development (R&D) expenditures, and trends in the development of industrial production, on the other, as a summary indicator of the reindustrialization of the national economy. Two main dependencies were considered. The first is the correlation between the size of foreign direct investment in the national economy and the

rate of its innovative development, which was assessed according to two indicators: the volume of high-tech exports and the number of patent applications filed. The second is the extent of state and corporate R&D financing aimed at increasing the competitiveness of the national economy through its modernization and shift to new technological platforms, which attests to the understanding of the innovative priorities of national development.

To confirm the hypothesis, the following methods were used: statistical analysis, which allowed for the primary processing of data describing the dynamics of innovative development indicators in countries and its factors; a comparative analysis of the innovative development of the countries included in the study. The informational basis included the statistical data of the World Bank on the EAEU countries for 2010–18, presented on the official website [2020]. The choice of trends in the innovative development of countries was limited by several conditions: first, the analyzed indicators of different countries had to be calculated with the use of a single methodology; second, the selected indicators had to be presented for all analyzed countries; third, the number of observations had to be sufficient for analysis and the drawing of reasonable conclusions. These restrictions predetermined the choice of the World Bank indicators in the science and technology section as follows: high-technology exports, estimated at current prices (in dollars) and as a share in the total volume of manufacture exports of the country (as a percentage of manufacture exports), and the number of patent applications. Admittedly, these indicators reflect only certain aspects of innovative development, but in an aggregated form, they represent the most significant positions of countries and their dynamics.

Methodologically, this study includes two main stages. The first stage ensures a sequential analysis of changes in specific indicators describing the innovative development of the countries under consideration, as well as factors that, according to the hypothesis, have a significant impact on it, which allowed the evaluation of general trends in the dynamics of innovative processes within the framework of the selected object of study. At the second stage, through the establishment of correlations between the factors and results of the innovative development of countries, measures are proposed to improve the national policy of innovative development and reindustrialization.

Results and Discussion

The EAEU is a relatively new international organization that ensures modern regional integration for, first and foremost, states that have deep and historically established economic, political, ideological, and sociocultural ties, and are currently experiencing similar problems of social development. The leaders of the EAEU states declared reindustrialization based on the latest technological paradigm as the basic trend of economic modernization, which conditions the intensification of research and commissioning activities with the purpose of transitioning national economies onto an innovative development path [Shelomentsev et al., 2017]. In its most general form, reindustrialization is understood as the restoration of domestic industry on a new technological platform, as well as the return of industrial enterprises previously taken abroad, but with consideration of modern technological conditions and innovations.

EAEU technology platforms have significant resources and scientific and technical potential, the use of which will significantly increase the level of competitiveness of the transport sector and infrastructure and ensure their sustainable development [Andronova, 2016]. Technology platforms permit the inclusion of all relevant stakeholders, in particular, manufacturers, research institutes, and specialized classification societies. In general, technology platforms are tools to develop effective mechanisms that, regardless of global challenges and national sectoral policies, will ensure proper coordination of R&D. To date, the EAEU has registered about 40

so-called "separate" platforms (bioeconomics, energy, environment, information and communication technologies, manufacturing and technology, and transport) and three multisectoral platforms – nanofutures (nanotechnology research), industrial safety (reduction of the impact of industrial enterprises on the environment, ensuring safe working conditions, and prevention of technological disasters) and ConXEPT (development and sale of innovative products to end users and market research) [Gusakov et al., 2019; Tikhonovich, Zemlyanskaya, Antonenko, 2020].

For the dynamic development of the digital economy in the EAEU, the successful implementation of a digital agenda and national digital economy projects is crucial for increasing the competitiveness of EAEU countries in world markets in the face of increasing global innovative hypercompetition. Eurasian cooperation within the framework of the EAEU Digital Economy and Digital Eurasia programmes is aimed at creating conditions for the emergence of new breakthrough and promising end-to-end neuro-digital technologies and platforms, including wireless technologies, biometrics, virtual and augmented reality, artificial intelligence, electronic governments, and network security, the use of which is intended to ensure the implementation of the competitive advantages of the countries of the Eurasian Economic Space [Popova, 2020].

The current stage of development of Russia, Kazakhstan, and other EAEU countries indicates that states are forced not only to reindustrialize, but to industrialize the economy from scratch, since their industries, for known political reasons, were completely destroyed or are technologically obsolete. In this regard, reindustrialization acts as the design and deployment of internal industrial and technological chains that create use values for both industrial and consumer purposes. This is one of the most important features of the reindustrialization of EAEU countries, which noticeably distinguishes it from the reindustrialization of the U.S., Great Britain, and several other developed countries.

Analysis of Trends in Industrial and Innovative Development of EAEU Countries

As noted above, the main indicator describing industrialization trends is the dynamics of the industrial GVA level from GDP across the EAEU countries. Figure 1 demonstrates that the share of industrial GVA in GDP fluctuated from 27–40% in 2010 up to 25–33% in 2018 [WB, 2020]. There is a downward trend in the share of GVA in industry, which indicates a decrease in industrial production against the background of an increase in the service sector. Among the EAEU countries, a high share of GVA is typical for Kazakhstan and Belarus, and a low level of GVA in industry is observed in Kyrgyzstan and Armenia.

The next indicator describing both the level of industrial development of the national economy and its investment attractiveness is the volume and dynamics of foreign direct investment. Figure 2 shows that rather significant volumes of foreign investments and their volatility are inherent in the Russian economy [WB, 2020]. The impact of the sanctions policy can also be seen from the graph. A sharp decline was experienced during 2014–15 – a drop from $70 billion in 2013 to $6.8 billion in 2015. In this regard, the volumes and volatility of foreign direct investment in the Kazakhstani economy are described by more stable and smooth fluctuations, which generally indicates the investment attractiveness of the national economy and the business activity of economic agents. The rest of the EAEU countries, except for Russia and Kazakhstan, are distinguished by low investment attractiveness, as evidenced by the relatively low volumes of foreign direct investment, which also reduces the investment potential of the reindustrialization.

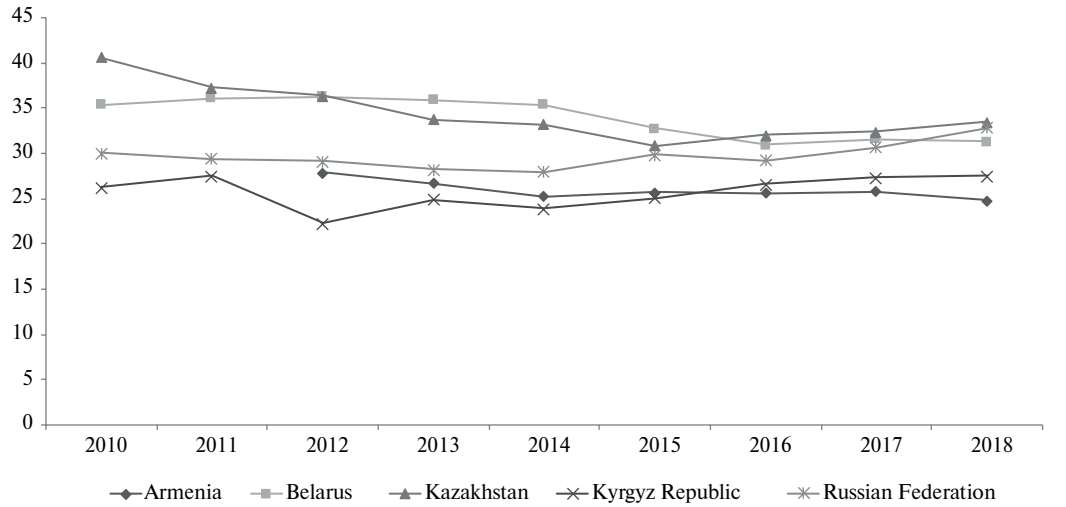

Figure 1. Dynamics of Industry GVA (Including Construction) in EAEU Countries (% of GDP)

Source: Compiled by the authors based on data World Bank [2020].

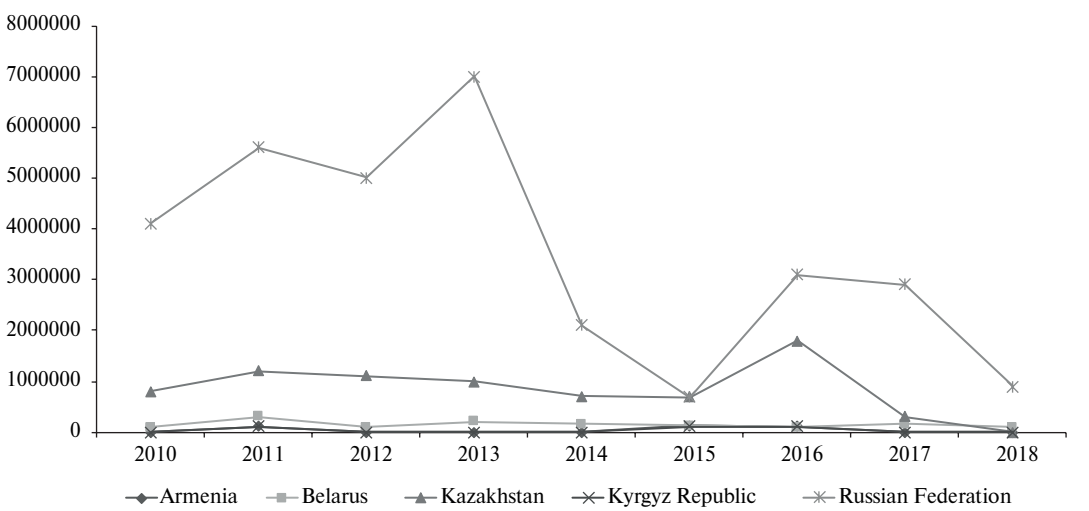

Figure 2. Dynamics of Foreign Direct Investment in EAEU Countries, Net Inflow ($ Millions)

*Source: C*ompiled by the authors based on data World Bank [2020].

The indicator of high-tech exports according to World Bank statistics is presented in quantitative and share values. In quantitative terms (in thousands of dollars) (Fig. 3), the dynamic of high-tech exports in Russia is described by a fairly stable growth compared to 2010, the growth of the indicator was more than double [WB, 2020]. For the rest of the EAEU countries, the dynamics are almost stable, except for Kazakhstan, where high-tech exports are described by significant volatility. At its peak in 2012, it amounted to $3.5 billion and at the lowest point in 2018, to $1.7 billion, a scatter of more than two times. Apart from Kazakhstan and Russia, high-tech exports are inherent in Belarus, while Armenia and Kyrgyzstan display insignificant indicators.

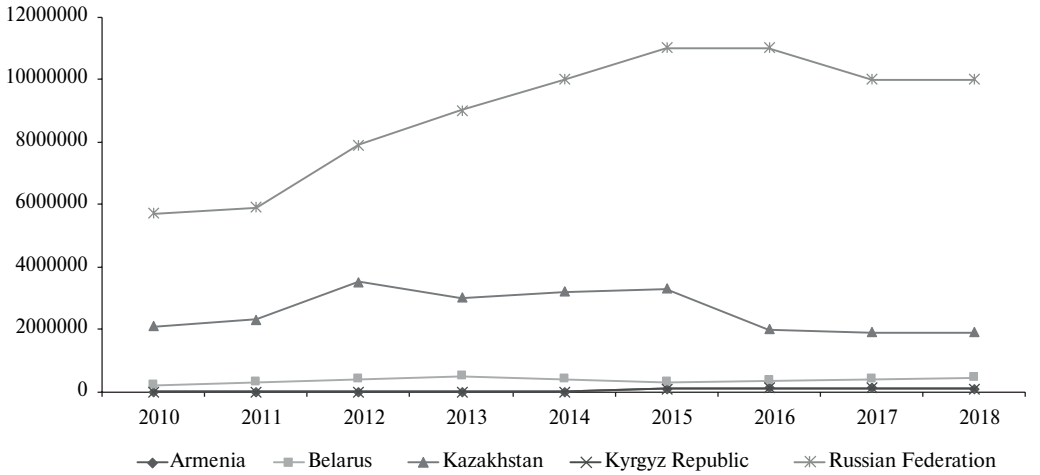

Figure 3. Dynamics of High-Tech Exports of EAEU Countries ($ Thousands)

Source: Compiled by the authors based on data World Bank [2020].

Compared to quantitative data, the relative indicators of high-tech exports across EAEU countries are described by significant fluctuations (Fig. 4). High shares of exports of high-tech products in the total volume of industrial exports are inherent in the Kazakhstani economy – 41.3% in 2015, which dropped to 22.0% in 2018. For the rest of the EAEU countries, except for Kyrgyzstan and Russia, the share of high-tech exports has a fairly stable dynamic. In Kyrgyzstan, the share of high-tech exports increased from 2.05% in 2014 to 19.93% in 2016 (more than a ninefold increase) but decreased in 2018 to 8.05%. The spread of Russian indicators is in the range of 10–15%. In general, the observed volatility of this indicator displays the dynamics of not only the high-tech sector, but also the industry, which is reflected in the global environment and also in the rates of national currencies that were under significant devaluation pressure during the period under study [WB, 2020].

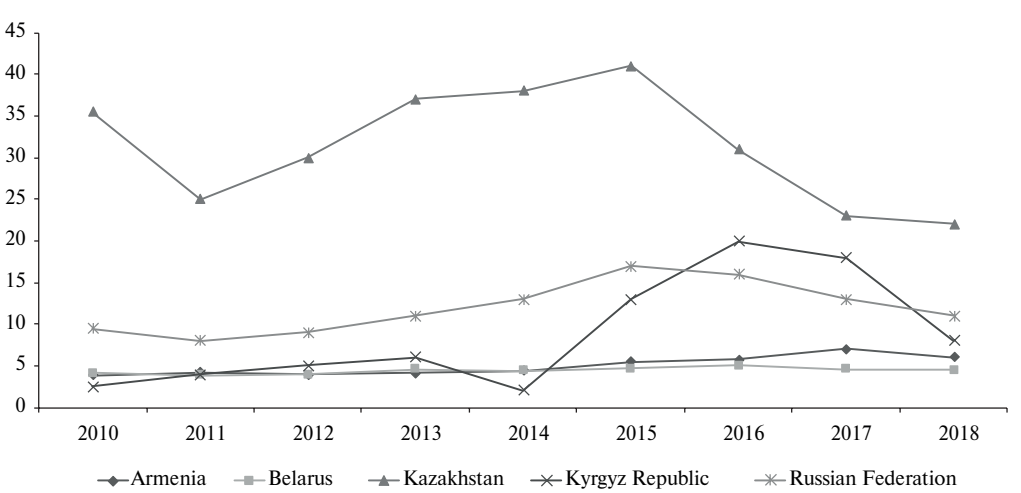

Figure 4. Dynamics of High-Tech Exports of EAEU Countries (% of Industrial Exports)

Source: Compiled by the authors based on data World Bank [2020].

The next indicator describing the main trends in the development of the scientific area of the EAEU countries is the amount of research funding, defined as the share of funding for R&D expenditures as a percentage of GDP (Fig. 5). This indicator has certain characteristic values, deviations from which indicate problems in science and innovation. According to the recommendations of the Organisation for Economic Co-operation and Development (OECD) [1996], the lowest threshold for R&D funding amounts to 1% of GDP, while the recommended threshold is 3%, within which the national economy is recognized as having shifted to a "knowledge economy." Figure 5 demonstrates that only Russia finances R&D within the framework of the lowest permissible threshold while the other EAEU countries do not reach even that,

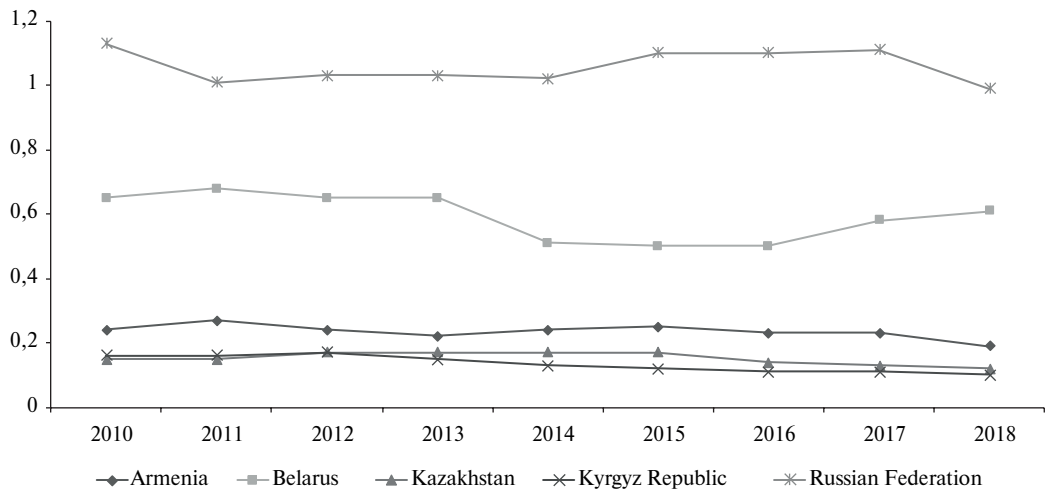

Figure 5. Dynamics of the Share of Financing of R&D Expenditures in EAEU Countries (% of GDP)

Source: Compiled by the authors based on data World Bank [2020].

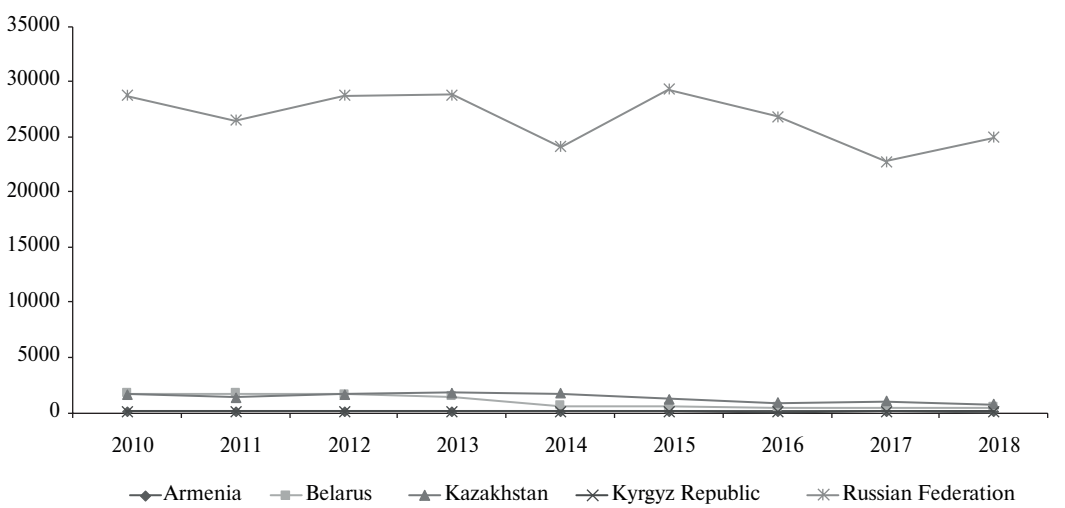

Figure 6. Dynamics of Patent Applications by Residents of EAEU Countries

Source: Compiled by the authors based on data World Bank [2020].

which indicates that there are serious problems in understanding the need for domestic science and the implementation of national scientific and innovation policy. While the indicators of Belarus, at 0.5–0.6% of GDP, are approaching the recommended minimum threshold, Kazakhstan, Kyrgyzstan and Armenia need to increase the funding for R&D tenfold. Considering the EAEU states' development programmes for science and innovation, one can see the tasks of increasing funding for science. However, for many years, these programmes and their objectives have been merely declarative, and if the situation is not fundamentally changed, the scientific factors of reindustrialization will be futile.

As for the last indicator – the number of patents – during the analyzed period, the ratio of the number of patent applications by residents in EAEU countries remained unchanged (Fig. 6). The undisputed leader in this regard is Russia, which accounted for more than 94% of the total number of applications filed by residents of these countries in 2018. The second and third places are taken by Kazakhstan and Belarus, which account for 2.99% and 1.72%, respectively. The impact of economic crises on the dynamics of this indicator had next to no significance.

Identification of Correlations Between the Factors and Results of Innovative Development of Countries and Recommendations for Improving National Reindustrialization Policy

Analysis of changes in indicators describing the innovative development of countries and their links with the identified factors – foreign direct investment, high-tech exports, financing of R&D costs, and the number of patent applications by residents – leads to the following conclusions.

The connection between the export of high-tech products and foreign direct investment is not observed in any of the countries under consideration. Therewith, there is a close correlation between the indicators of exports of high-tech products and R&D expenditures in Armenia. In addition, the relatively synchronous change in these indicators in Russia and Belarus was violated in 2012–13. The correlation between export indicators of high-tech products and R&D funding was observed in Belarus, while in Kazakhstan and Armenia, their changes were opposite in nature, confirming the lack of correlation between them. The influence of the volume of foreign direct investment on the number of patent applications filed by residents was most clearly revealed in Belarus and Armenia, while in Russia this connection is rather weak, and in Kyrgyzstan and Kazakhstan it is completely absent. The correlation between the indicators of the number of patent applications and R&D expenditures can be clearly observed in Russia, while in Kazakhstan, Belarus and Armenia it does not look very convincing.

Thus, the main factors that determine the dynamics of the analyzed indicators of innovative development in different countries are significantly differentiated. Thus, in Kazakhstan, there is practically no correlation between the analyzed parameters, which attests to the influence of several other factors on the studied indicators of innovative activity.

In Russia, the closest correlation is between the relative indicators describing the volume of high-tech exports and foreign direct investment as a percentage of GDP, which can be represented as a model with a high value of the approximation reliability equal to (R^2) 0.66: $y = 0.2667x^3 - 1.648x^2 - 0.4978x + 18.322$ (Fig. 7).

However, the inverse dependence between the analyzed indicators shows that during the period under study, with a steady increase in the relative indicators of foreign direct investment in GDP (in contrast to other considered states), there was a decrease in high-tech exports,

which indicates the "raw material" structure of foreign direct investment and low efficiency for the innovative development of the national economy. Therewith, there is a weak correlation between indicators of innovative development of the national economy and R&D expenditures. This indicator is calculated with a very large error and, probably, does not reflect the real costs in this area.

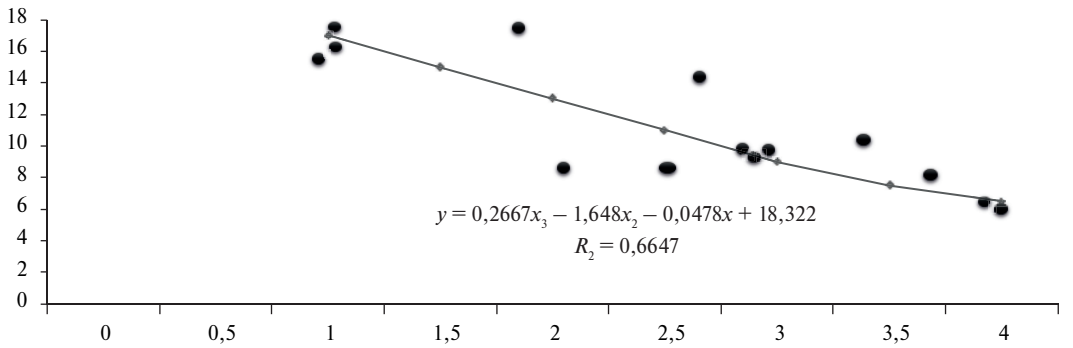

Figure 7. The Nature of the Dependence Between High-Tech Exports and FDI (% of Russian GDP)

Source: Compiled by the authors based on data World Bank [2020].

In Armenia, there is no clear dependence between the indicators describing the innovative development of the national economy, but there are implicit dependencies of these parameters that reflect the general trend. During the period under study, a weak correlation can be observed between R&D expenditures and indicators describing high-tech exports and the number of patent applications. In Belarus, the correlation between indicators of innovative development and influencing factors is more pronounced than in other countries under study. This can be explained by an overall rate of socio-economic development that is higher than that of other republics in the post-Soviet space, and by the stronger influence of the analyzed factors. Thus, the close correlation between the number of patents and foreign direct investment should be noted, as well as between indicators of high-tech exports and grants in technical cooperation. The dependence can be expressed by an equation with the R-squared value amounting to (R^2) – 0.67: $y = -3E - 05x^3 + 0.0065x^2 - 0.4909x + 15.23$ (Fig. 8). The graph below shows that the trend line is becoming flatter, indicating a decrease in the effectiveness of foreign direct investment.

Based on the identified dependencies and key factors influencing reindustrialization, the following recommendations for the development and implementation of national reindustrialization policy can be made. In general, reindustrialization policy should represent an integral set of methods and tools for managing this process. In turn, the mechanism for managing reindustrialization is a link in the mechanism for managing the national economy as a whole, thereby necessitating the harmonization of the methods of socio-economic and environmental management.

Thus, the economic mechanism constitutes a complex structure, which includes instruments and methods of state regulation, institutional support, and forms of functioning. Nine main types of economic institutions of the reindustrialization mechanism can be distinguished: reindustrialization incentives based on innovative development; rational use of natural resources and environmental protection; reindustrialization programming; protection of competition; assurance of national security; provision of natural resources for use; support of entrepreneurial

activity in the innovation sphere; attraction of private investment in sustainable use of natural resources and environmental protection; ensuring the budgetary efficiency of reindustrialization and environmental protection; and anti-corruption.

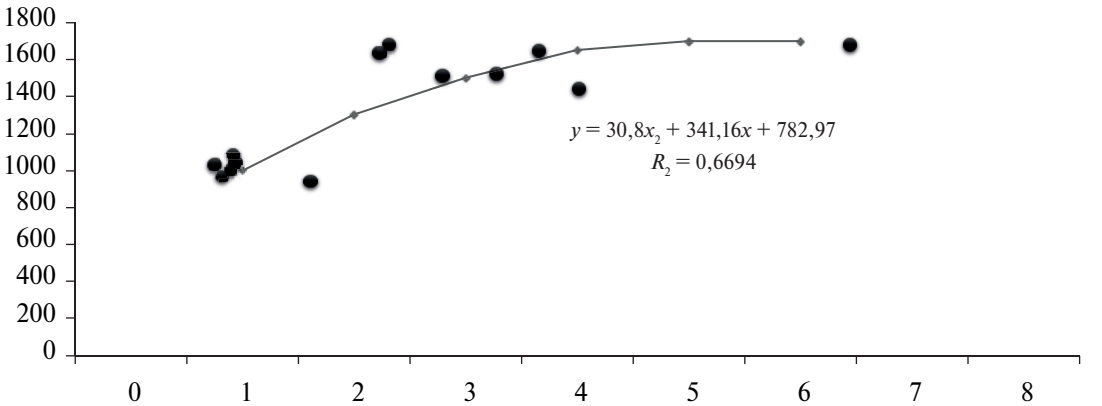

Figure 8. The Nature of the Dependence of Patent Applications and Foreign Direct Investment in the Republic of Belarus

Source: Compiled by the authors based on data World Bank [2020].

In the EAEU countries, these economic institutions are used with varying degrees of efficiency, depending on: the specifics of the respective regulatory framework of each country; provision and scale of involvement of natural resources in economic circulation; the sectoral composition of the economies; and efficiency of environmental protection institutions. Four main types of economic instruments (within the framework of functions established by legislation and other regulatory documents) of the national reindustrialization policy can be distinguished:

– stimulation of economic activity and the investment attractiveness improvement for the real sector of the economy;
– ensuring mutual responsibility of the authorities and the business community with regard to decisions taken by parties to the reindustrialization process;
– rationing and limiting the impact on the environment with an increase in the scale of production and the involvement of natural resources in economic turnover;
– prevention of negative social, environmental and economic consequences.

National reindustrialization policy should be based on the implementation of innovations in all their diversity. In the context of the proposed approach to reindustrialization, as noted above, innovations are considered quite extensively, covering the main sectors of the national economy: education and personnel training; provision of products, works and services that meet modern requirements; and a management system based on modern information and organizational technologies. The main areas of innovation also determine the basic reindustrialization trends, which include the creation of competitive industries, reconstruction of operating enterprises, closure of unprofitable non-competitive industries, implementation of environmental protection measures aimed at reducing the burden on the environment, utilization and recycling of industrial waste accumulated over the past years, and training of qualified personnel.

Conclusions

The analysis of the correlation between the rates of innovative development of countries, on the one hand, and foreign direct investment, R&D expenditures, and indicators of R&D funding, on the other, leads to the following conclusions. The correlation between the selected indicators of innovative development and the analyzed factors is much more complicated than is traditionally presented in the scientific literature. This is conditioned by the following circumstances. First, the impact of factors is mediated by the simultaneous presence of a wide range of other processes and conditions, which are often overlooked, while they can considerably change the dependencies under study. Second, among the conditions that tend not to be overlooked, the institutions existing in a particular country also play a large role, as does the effectiveness of the economic policy implemented by the government. If past experience is any guide, the latter can significantly affect the results of foreign direct investment, for example, by creating conditions for attractiveness in strategically important sectors of the national economy or by encouraging national companies to finance R&D.

The particularity of national economic policy leads to the second conclusion of this study, which relates to the reason that a factor (for example, foreign investments or grants) manifests itself in different ways in the economies of different countries. The one size fits all approach does not apply here. Therefore, as the analysis has shown, it is impossible to apply the same standard when evaluating the impact of a particular factor on the innovative development in different countries. In one country, a factor can have a positive effect, in another country it can have a negative effect, and in yet another – no effect at all. The key point here is the level of development of economic institutions and the innovation policy pursued by a particular country. In this sense, the task of the state is to "force" all factors to work for the national economy, ensuring its competitiveness. The degree of success in solving it characterizes the efficiency and effectiveness of innovation policy. Therefore, the problem is not only in attracting more investment, but in creating conditions under which investment will have the greatest effect on the development of the national economy and its renewal.

As practice shows, the role of the analyzed factors changed significantly during the time under review, which manifests on the graphs in the synchronous change of the corresponding indicators. The drivers of these changes were the global financial crises in 2009–10 and in 2014–15, when most of the patterns changed their nature, and the in-country nature of the economic situation. In this regard, the stability of the national economy is manifested in the stability of the existing trends in the dynamics of its development, despite the impact of external factors. As shown by the analysis, the Republic of Belarus displayed the highest resistance to endogenous influences, while most of the other countries under study were largely affected by them.

Admittedly, the given indicators cannot measure everything. They reflect only a small part of a wide and complex picture; however, they stand as specific examples to demonstrate the inconsistency of ongoing processes that require in-depth analysis when developing specific public policy measures in innovative development.

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