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Промышленная политика и инновационные преобразования национальной экономики

АЛЕКСАНДР НИКОЛАЕВИЧ ФОЛОМЬЕВ, **доктор экономических наук, профессор, заслуженный экономист Российской Федерации, заместитель заведующего кафедрой государственного регулирования экономики Института государственной службы и управления**
Российская академия народного хозяйства и государственной службы при Президенте Российской Федерации (119606, Российская Федерация, Москва, проспект Вернадского, 84). E-mail: an.folomyev@migsu.ru

Аннотация: Для того чтобы оценить правомерность, полноценность и масштабность промышленной политики, осуществляемой мировыми странами-лидерами, необходимо уточнённое понимание содержания, субъектов, объектов, основных задач, направлений, механизмов выработки и реализации промышленной политики, её качественного ресурсного наполнения. Автор в статье определяет объект промышленной политики. Он указывает, что экспертами высказываются различные точки зрения по этому вопросу, включая отрицание конкретного отраслевого объекта, так как промышленное преобразование в современных условиях претерпевают все компоненты национальной экономики, все сферы деятельности человека. Данный аргумент в определённой степени обоснован и подтверждён практикой. Но всё, что связано с инновационным промышленным обновлением всех составных частей экономической системы, всех сфер жизнедеятельности человека, воспроизводится, в основном, в промышленной сфере, состоящей из совокупности взаимосвязанных отраслей, взаимодействующих через сложную сеть воспроизводственных процессов. Это подтверждается межотраслевыми продуктовыми балансами. Промышленная политика, естественно, озабочена продвижением промышленной продукции и услуг во все компоненты экономики и сферы жизнедеятельности человека. Но эти компоненты и сферы объектами промышленной политики не являются. Анализ деятельности международных институтов развития ОЭСР и ЮНИДО показывает, что они промышленную политику в национальных экономиках рассматривают, прежде всего, как деятельность государства по улучшению бизнес-среды, по изменению структуры экономики, приоритетному обновлению отдельных секторов, видов деятельности, способствующих качественному экономическому росту, изменению благосостояния людей.
Ключевые слова: промышленная политика; инновации; бизнес-среда; национальная экономика

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INDUSTRIAL POLICY AND INNOVATIVE TRANSFORMATION OF NATIONAL ECONOMY

ALEKSANDR NIKOLAEVICH FOLOMYEV, **Doctor of Economics, Professor, Honored Economist of the Russian Federation, Deputy Head of the Department of GRE IGSU**
Russian Presidential Academy of National Economy and Public Administration (84, Prospect Vernadskogo, Moscow, Russian Federation, 119606). E-mail: an.folomyev@migsu.ru

Abstract: In order to assess the legitimacy, usefulness, and scale of the industrial policy pursued by the world's leading countries, a more precise understanding of the content, subjects, objects, main tasks, directions, mechanisms for the development and implementation of industrial policy, and its qualitative resource content is necessary.The author of this article defines the object of industrial policy. He points out that different point of view on this issue is expressed by experts, including the denial of a particular industrial object since industrial transformation under modern conditions undergoes all components of the national economy, all spheres of human activity. This argument is justified and confirmed by practice. But everything that is connected with the innovative industrial renewal of all components of the economic system, all spheres of human activity, is reproduced mainly in the industrial sphere, consisting of a set of interconnected industries interacting through a complex network of reproductive processes. This is confirmed by interbranch grocery balances. Industrial policy is naturally concerned with the promotion of industrial products and services in all components of the economy and the sphere of human life. But these components and spheres are not objects of industrial policy.The analysis of the activities of the international development institutions of the OECD and UNIDO shows that they consider industrial policy in national economies primarily as the state's actions to improve the business environment, to change the structure of the economy, to update priority sectors, activities that promote high-quality economic growth and change well-being of people.
Keywords: industrial policy; innovation; business environment; national economy

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Introduction

The innovative vector in the strategic development of the national economy, conditioned by a combination of objective external and internal reasons and fixed in a number of state acts, is designed to overcome a number of problems that Russia faces in the modern world economy. They are connected: with the intensification and growing aggressiveness of competition in world commodity markets, especially high-tech, where Russia's positions are more than modest; with a significant dependence of the technological base of the national economy on imports, which does not contribute to overcoming its technological gap from the world level; with low competitiveness of many Russian goods, especially technical and technological ones; with political and economic pressure on Russia through various sanctions and restrictions, which forces to solve the tasks of import substitution, especially high-tech.

There are also internal reasons that require urgent measures for an innovative strategic transformation of the country's economic system. First of them are:

The need to create new competitive advantages of the Russian economy in the context of increasing competition and changing its facilities in the world economy;

The aging of the technological base of production and its lagging behind the growth in number and quality of the needs of society, from the scientific and innovative level of leading countries – competitors. The level of high-tech and high-performance equipment in the Russian economy today is estimated at 20-25%. In developed countries the figure is 70–80%;

Significant technological dependence of the country on Western obsolete and outworn technologies;

Low susceptibility of many entrepreneurial structures to technological innovations (see Table 1). According to the indicator "The ability of companies to borrow and adapt technology", calculated by the World Economic Forum, in 2009 Russia was on the 41st place out of 133 countries [1].

Domination of raw materials and fuel complexes in the structure of national economy, which naturally leads to a slowdown in economic growth. Experts argue that if the current situation persists until 2017, GDP growth rates will be no more than 2.5%, and possibly even lower;

Insufficient infrastructure provision of national economy and its individual regions.

Therefore, the country has set a strategic comprehensive task of transferring the Russian economy "to an innovative socially-oriented model of development" [2] characterized by a number of specific targets. (The share of innovatively active enterprises for updating the technological base in their total number to be increased from 9% in 2009 to 50% by 2020; to increase the share of Russian high-tech goods exports in their total world exports from 0.25% to 2%; to increase the share of innovative products in total industrial output from 4.9% to 35%; the internal costs of research and development should increase from 1.3% in GDP to 3% and so forth).

Table №1. [1] **The share of industrial organizations carrying out certain types of innovation in the total number of organizations performing technological innovation (in %)**

№	Types of Innovative Activity	1995	2005	2015
1	Research and development. Acquisition of	57,9	31,6	37,9
2	new technologies.	18,9	14,9	9,5
3	Acquisition of rights to patents and patent licenses.	11,4	8,7	6,1
4	Acquisition of machinery and equipment. Practice and staff training.	49,1	63,5	61,0
5		21,3	22,5	16,7

1 The table was compiled from the statistical collection "Indicators of innovation activity 2017". - Pp. 18-19.

Transforming and developing the national economy

The innovative strategic prospects of transformation of the national economic system in the conditions of modern external and internal problems combination can't be realized without a high-quality update of the industrial sphere of the country, without saturation by its complete set of high-quality investment resources, without creation of all prerequisites for market development of technical and technological industrial output; without stimulation to update the technological base of all components of economy. Such approach in the modern development of the national economic system is proved by economic science and confirmed with the practice of many foreign countries.

Taking into account the objective strategic transition of national economies to a predominantly innovative type of development and the processes of globalization, the leading countries of the world began to develop and actively use more sophisticated mechanisms of state industrial policy in which forms, methods and instruments of influencing the processes of transforming the main spheres and sectors of the economy on a new industrial basis have become more systematic and purposeful to strengthen the positions of national economies in a changing world economy state.

In order to assess the legitimacy, usefulness, and the scale of industrial policy pursued by world's leading countries, a more precise understanding of content, subjects, objects, main tasks, directions, mechanisms for the development and implementation of industrial policy, and its qualitative resource content is necessary.

Justified by economic science and confirmed by the practice of countries advanced in the industrial develop-

1 See Strategy for Innovative Development of the Russian Federation for the period until 2020. - Pp.9-10.

2 See Strategy for Innovative Development of the Russian Federation for the period until 2020. P. 2.

ment is the statement that *industrial policy is an integral part of a single integrated socio-economic policy of the state*. And, consequently, it is in interrelation and interdependence with other state politicians, but not substituting them. First of all, according to some economists, we talk about the links, the coherence of the processes for the development and implementation of industrial policy with the corresponding processes of scientific, innovative, investment, educational and other state policies, but not about their absorption.

In this regard, an important methodological approach is *to determine the object* of industrial policy. In this look, experts express different points of view, including the denial of a specific industry subject, as industrial transformation under modern conditions undergoes all components of the national economy and all spheres of human activity. This argument is to a certain extent justified and confirmed by practice. But everything that is connected with the innovative industrial renewal of all components of the economic system, all spheres of human activity is reproduced mainly in the industrial sphere, consisting of a set of interconnected industries interacting through a complex network of reproductive processes. This is confirmed by interbranch grocery balances. For the conditions of developed market relations, it can be concluded that *the industrial policy pursued in the national economy is the industrial sphere and the products and services reproduced in it, and above all technical and technological networks and their elements*. Industrial policy is naturally concerned with the promotion of industrial products and services in all components of the economy and the sphere of human life. But these components and spheres are not objects of industrial policy.

Any policy in the field of economy is developed and realized by *the subject or subjects.* This is confirmed by the analysis of foreign and domestic economic literature and practice. In Russia, the participants in the formation of industrial policy and its implementation are defined by the law bodies of state power of Russia, public authorities of the subjects of the Russian Federation, local self-government bodies, the Accounting Chamber, business entities in the sphere of industry, organizations that are part of the infrastructure support for this activity.[3] However, given the need for coordination, a unified focus on the activities of all actors, *the determining role* in the formulation and implementation of industrial policy is undoubtedly the responsibility of the federal government. From this point of view, *industrial policy in the national economic system is a state matter.*

The analysis of the activities of the international development institutions of the OECD and UNIDO shows that they consider industrial policy in national economies primarily as the state's actions to improve the business environment, to change the structure of the economy, to update priority sectors, activities that promote high-quality economic growth, change well-being of people[4]. [Warwick, 2013]

In its economic essence, *industrial policy is a combination of the state's relations* in the person of state authorities to the industrial sphere, to the work carried out in it and its results, to the effectiveness of their use in the economy and other spheres of human life.

These relations of the state are manifested: *in the knowledge and understanding of the role of the industrial sphere, the results of the activity of the subjects of industrial activity* in the systematic renewal of the national economy and its components in accordance with the achievements of the modern scientific and technological revolution; *in the ability and will to realize* this knowledge and understanding through the development and implementation of the strategy and tactics of the scientific and technological development of the economic system. Without a full-fledged and dynamic industrial sphere, such development in conditions of a complex, and sometimes aggressive, external economic environment is impossible.

In our view, in this connection, industrial policy cannot be reduced only to a complex of various measures (legal, economic, organizational, etc.) aimed at developing industrial potential, ensuring the production of competitive industrial products, as provided for by federal law.[5] This set of measures is predetermined by the targeted orientation of industrial policy, the objectives and directions of achieving the goals, and full complex resource support.

Industrial policy as a part of national economy

In this article, *industrial policy is viewed as an integral part of the complex social and economic policy of the state, reflecting its attitude to the sphere of industrial production, the results of this production, the effectiveness of their use in all spheres, sectors and components of national economy, as well as in foreign economic activity. All this is manifested in the development and implementation of goals, objectives, development trends, regulatory mechanisms and quality comprehensive resource support for the industrial sector.*

Proceeding from the understanding of national economy as a large and complex system, it can logically be argued that *all public policies in the field of economy are not simply interrelated, but interact with each other, complementing,* without substituting each other. Therefore, special government bodies are needed to ensure the coordination of the development and implementation of various policies in the field of economy, given the dynamics of the priorities of these policies' objectives. *The new*

3 Federal Law of the Russian Federation of December 31, 2014, No. 488-FZ "On Industrial Policy of the Russian Federation" (Amended by Federal Law No. 216-FZ of July 13, 2015). *The Collection of Legislation of the Russian Federation*, 2015. - No. 1 - P. 41.

4 UNIDO, "Industrial Development Report", UNIDO, 2013.

5 Federal Law of the Russian Federation of December 31, 2014, No. 488-FZ "On Industrial Policy of the Russian Federation" (Amended by Federal Law No. 216-FZ of July 13, 2015). *The Collection of Legislation of the Russian Federation, 2015*. No. 1 P. 41.

industrial policy in conditions of an objective transition of national economy to a predominantly innovative type of development must be strictly coordinated in all respects, first of all, with state scientific, technical, innovative and educational policies, ensuring the integration of science, education and industrial production.

Analysis of the economic development practice of many advanced countries shows that the industry mission in any national economy, including the Russian one, is growing and becoming more complex in modern conditions.[6] This is due to a number of objective circumstances.

First, it is the industry that ensures the satisfaction of the majority of social needs that are rapidly renewing and reappearing.

Secondly, the industry reproduces such fundamental, important *for the entire economy investment resources as technical and technological resources.*

Thirdly, the basic properties of the industrial system *increasingly predetermine* such dynamically changing properties of the national economy as a) the ability to self-development; b) competitiveness with a set of necessary competitive advantages; c) ecological and economic sustainability; d) resource efficiency and some others.

Fourthly, industry reproduces the greatest complex multiplicative and network effects of impact on the national economy, causing an objective need and creating necessary innovative resource prerequisites for it in an agreed industrial innovation transformation of virtually all spheres and sectors of national economy. At the same time, the demand for new goods and services increases significantly, and with it the interest of entrepreneurs in meeting it. That is *the overall business activity in the economy is sharply increasing*. This is due to the systematic nature of economy, and, accordingly, the interconnectedness of all its structural components.

Fifth, innovative industrial transformation of the economy leads to an increase in demand for quality raw materials and fuel and energy resources, as well as for electricity, creating new jobs with a creative nature of labor, providing higher wages than the average for the economy. This is especially important for the Russian economy with its predominant fuel and raw materials component.

The analysis of the strategic targets for the new industrial policy of Western countries (see Table 1) and other leading countries of world economy (China, India, South Korea, Japan, etc.) shows that they are all primarily related to *ensuring the competitiveness of industrial spheres in national economies and interethnic economic alliances* (see EU). At the same time, the competitiveness of industry is viewed in the updated sense as an "excellent" world-class industrial production[7]. [Varnavsky, 2015, P. 35] This qualitatively new competitiveness includes:

Competitive and mainly high-tech industrial products;

Competitive superior network technology base of its production. The reliance on major innovation-technological breakthroughs;

Competitive resource efficiency (strategic reduction of material and energy costs);

Competitive industrial structure based on: a) the largest intersectoral corporations with highly diversified production and large-scale R & D sphere[8]; b) medium-sized, stable science-intensive high-tech companies that focus on narrowly specialized markets in the country and world economy;

Competitive management based on a new management philosophy that guides industrial production towards permanent innovation changes (increasing mobility as a competitive advantage);

Competitive information support of the economy, including industry;

Competitive power supply;

Competitive motivational atmosphere.

The efficiency of the new industrial policy of foreign countries can be judged to a certain extent by the state and dynamics of the competitiveness of the manufacturing industry and the growth of scientific and technological potential of economy.

This is evidenced by changes in the export of manufactured goods of the US, EU and China, and other countries, as well as data on R & D financing.

It is important to note another target orientation in the new industrial policy of Western countries, which is very useful for Russia – it is an industrial alignment of the regions development. In this case, the practice of Germany is indicative.

Industrial policy in Russian economic system

The mission of industry in any national economy, including the Russian one, is growing in modern conditions. This is due to a number of *objective circumstances.*

It is the industry that ensures the satisfaction of the majority of social needs that are rapidly renewing and appearing again. Only industry reproduces such fundamental for the whole economy complex system investment resources as technical and technological. The basic

6 «The economic importance of the industry is much larger than it is shown by its share in GDP. The industry accounts for 80% of European exports and more than 80% of private investment in R & D. The European Commission is considering a strong industrial base as a key factor in European competitiveness and European economic recovery». See the EU Special Communiqué "For a European Industrial Renaissance", adopted in early 2014 (For a European Industrial Renaissance, EC, Brussels, 22.01.2014. //eur-lex.Europa.eu/legal-content/EN/TXT /?uri=CELEX:52014DC0014).

7 How to succeed. Practical advice for business people. See http://www.bibliotekar.ru/biznes-23/28.htm/ - P. 1.

8 The production manager of the "General Electric" corporation said: "If we cannot be the first or at least the second number in an industry, we should either re-profile the relevant enterprises or sell them quickly" [Varnavsky, 2015, P. 2].

properties of the industrial system increasingly predetermine such dynamically changing properties of the national economy as: a) the ability for self-development; b) competitiveness with a set of necessary competitive advantages; c) ecological and economic sustainability; c) resource efficiency and some others.

The industry of Russia lags behind its objectively increasing role in the economy. This was clearly manifested in its unwillingness to deal promptly with questions of import substitution in conditions of unacceptably high dependence on imported technologies and equipment, especially in high-tech industries.

Hence, on the basis of studying the experience of a number of leading countries in the world economy, Russia needs the most important condition for development and implementation of a strategic task - *the re-industrialization of national economy* and the formation on this basis of *qualitatively new competitive advantages* that could ensure Russia's technological parity with world technological leaders. This corresponds to the positioning of our country, proclaimed by the President of the Russian Federation. That is a special state strategic program for the formation of a new industrial policy with its systematic renewal must be developed, the implementation of which will ensure in many respects technological independence and the security of the country in certain world situations. It's not just about the scientific and innovative transformation of existing industries, but also about the creation of new industrial productions. *The development of industry largely guarantees the formation of a full-fledged demand for the results of the scientific activity, for innovation, for innovation systems.* Without this, it is impossible to ensure Russia's technological parity with developed countries and expand our niches in the world markets of high-tech goods.

The new industrial policy of Russia should be implemented through an interrelated, interacting set of priorities: a) sectoral, b) regional, c) interbranch, d) macro technology (technological networks), e) technological, e) scientific, g) innovation, h) investment. *There is no full interconnectedness of these priorities today.* Particularly in this set of priorities, importance should be given to prioritizing the development of a high-tech complex (HTC) and its core in the military-industrial complex (MIC), as well as investment engineering that fills investment with innovative technology and technology components.

But this priority cannot be carried out to the detriment of development of the fuel and energy complex, the extraction and processing of oil and gas. All the arguments about the "oil needle", about the "oil and gas curse" of Russia, in our opinion, are wrong. *Oil, gas and other basic resources are our most important competitive advantages in the world economy* and they do not need to be replaced, but complemented with their new technical and technological industrial advantages.

The implementation of the aforementioned holistic set of priorities, as studies and best foreign practices show, should be carried out through *a combination of industrial and scientific innovation programs*, carefully monitored by the Government and gradually updated, and the mechanism of state regulation should be clarified in order to improve its effectiveness. [Zvyagintsev, 2015, Pp.44-55]

The new industrial policy of Russia will require comprehensive quality resource support. This is not only about the amount of funds. It is necessary to form and ensure the effective use of the resource system (technical, technological, qualifying, intellectual, information, entrepreneurial, energy, etc.) that are innovatively filled and constantly located with each other in a coordinated proportional relationship.

During the research work carried out at the Department of State Regulation of Economics of the IGSU RANEPA, proposals were developed on the directions of strategic innovation transformation of Russian industry. Among these directions are:

Priority strategic innovation development of a high-tech complex (HTC), as a special subsystem of national economy, capable of reproducing innovative technical and technological resources for the entire national economic system;

Full-fledged scientific support of industrial transformations on the basis of accelerated priority restoration of applied science and the formation of the corporate sector of science;

The formation of a special differentially arranged federal and regional motivational system for the growth of innovative activity of industrial enterprises and corporations. In the defense industry today, the share of innovatively active enterprises averages about 45-50%. It is necessary to reach these indicators in 2-3 years throughout the high-tech complex in Russia;

Strategic structural modernization of all industry on the basis of large state and public-private, including transnational corporations in proportion to their combination with medium and small innovative structures. The corporations themselves should be of a different quality due to a combination of scientific and innovative, production and educational activities (scientific, educational and production structures);

Formation with active state participation of stable, sustainable sources of quality investment resources, including: a) restructuring of banking system in the direction of a special stimulation of innovative lending to industry by banks; b) change in the ratio of accumulation and consumption in the use of GDP; c) development of the national venture system; d) connection of national financial reserves, etc.;

Coordination of all transformations in an industry with the main priorities related to improving the quality of life for the population;

Restructuring of the entire system of personnel training for industry in accordance with priorities agreed with the priorities of transformation of the industrial sector of the country, *including a large-scale restoration of vocational*

training for working professions, but on a qualitatively new scientific and technological basis;

Active protectionism, above all, of the state to promote complex high-tech technical systems and materials to the world markets of high-tech goods;

Rationalization of the size structure of industry (the ratio of large, medium and small production forms).

Thus, the strategic development of Russia's industry as the basic source of full-fledged maintenance of the renewal of the technological base of the economy by innovation-filled technical and technological systems is, in our opinion, the most important strategic direction of the innovative transformation of Russian economy.

State-business participation in the innovative transformation of the economy

For the current economic situation in Russia, overcoming the consequences of the economic crisis, it is extremely important to find a balanced ratio of state-business participation in the innovative transformation of the economy. In this regard, we place great hopes on strategically oriented *technological platforms*. This is a communication tool that, in our opinion, will *unite and coordinate* the efforts of such interested parties as business, scientific and educational institutions, the state and consumers to develop modern technological networks. Now more than 20 of such platforms are being formed in Russia. Separate technological platforms began to actively interact with foreign partners. However, under the conditions of modern economic sanctions, the interaction processes slowed down.

Analysis of domestic and foreign practice shows that the state, developing and implementing a new industrial policy, while interacting with business, receives not only its investment resources and reduces the burden on the budget, but also gets a more flexible system for managing high-risk innovative projects. And business, in its turn, is interested in using various state resources, guarantees, and preferences for solving its tasks. Therefore, in Russia, it is necessary to take a very close look at the experience of a number of countries (France, Germany, USA, Canada and China) on the development of public-private partnership in scientific and technological transformation of industrial production. This also applies to the development of the venture industry, the growth of the "business angel" institution, the formation and development of innovative clusters.

An important direction of interaction between the state and business in the scientific and technological development of the economy is the structural modernization of the industrial system of the country, the rationalization of its dimensional structure. We are convinced that the basis for the *new national industrial structure should be large and medium-sized corporate entities* that provide a largely competitive position of Russian economy in world economy.

In modern unstable conditions in the dimensional structure of the Russian economy, special attention of the state is deserved by the fast-growing medium innovative technological companies of "technogazels" [Medovnikov, Rozmirovich, Oganesyan, 2015]. According to various estimates, there are more than 1000 such companies in the Russian economy today.

A study of domestic and foreign practice has shown that medium-sized fast-growing innovative companies have a number of important qualities. Among them are:

The high innovative activity and stable links with science;

A stable position in national markets and for many – in the world markets of high-tech goods;

Among the factors of success, state support and external financing are in the last places;

The most important factor of success is pioneering innovation and the intellectual potential of developers and designers;

Reference to own financial resources and credits for working capital replenishment, which, in conditions of limited state financing, is very important;

High export potential (78% of medium-sized innovative high-growth companies surveyed are exporting);

Leading positions of companies in their main markets; [9]

High intellectual potential and managerial skills of company executives.

In our view, *the priority development of large and medium-sized high-tech companies, the optimization of their correlation with small innovatively active entrepreneurial* structures, should be regarded as a strategic direction of the innovative transformation of Russia's industry and economy as a whole in today's unstable conditions both within the country and in the world economy.

9 According to the survey results, 15% of medium-sized fast-growing innovative companies are indisputable leaders of the main markets for them, 69% of companies share leadership positions with 1-2 other companies [Medovnikov, Rozmirovich, Oganesyan, 2015, P. 25].

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