



## **WORLD EXPERIENCE OF STRUCTURAL POLICY FORMULATION AND IMPLEMENTATION**

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<b>Received:</b> August 1 <sup>st</sup> 2022 <b>Accepted:</b> September 1 <sup>st</sup> 2022 <b>Published:</b> October 4 <sup>th</sup> 2022	Today, special attention is being paid to structural restructuring of our country's economy, improvement of the structure of the gross domestic product by increasing the production of industrial products, creation of the added value chain. This article analyzes the world experience of structural policy improvement and its use in the economy of our country .
<b>Keywords:</b> GDP, GDP structure, industrialization, structural policy, import and export, import structure, import substitution, domestic production, economic development.	

**INTRODUCTION.** Despite the fact that attention to structural (industrial) policy has waned for a while and interest in it has waned on a global scale, today we can see that the demand for this form of state intervention in the economy is growing again. While a large number of studies have been carried out on industrial policy and its role in the development of socio-economic systems, the authors of these studies put forward almost identical opinions on the main features and specific aspects of industrial policy (Krugman, Obstfeld, 1991; Bruton, 1998; Rodrik , 2004; Pack, Saggi, 2006; Kuznetsov, Simachev, 2014):

1. goal orientation - actions taken by the state are aimed at making positive changes and making shifts in the economy;
2. start and/or accelerate or expand new activities;
3. overt or covert prioritization - distinguishing encouraged sectors or types of activities;
4. emphasis on bringing benefits to the economy and society;
5. by its very nature - to determine the development of the economy in advance;
6. taking into account long-term development prospects, aiming for the medium term;
7. aiming to enter the world market.

At the same time, in addition to the relative generality of views on the important features of industrial policy, today there is no generally accepted definition of this concept. In this study, we use the following definition:

Industrial policy is a set of measures implemented by the state aimed at improving the

business environment and (or) increasing economic activity in economic sectors and technological areas, providing favorable conditions for economic growth and improving the welfare of society compared to non-existent conditions ( Pack , Saggi, 2006; Warwick, 2013) [1] .

In particular, unlike macroeconomic policy, which can be defined in the same way for different countries, industrial policy is unique for each country and is influenced by the time factor. This is due to the constant change of external conditions, the variety of tasks being solved, as well as the fact that industrial policy is a "set" of various measures characterized by different methods of state management.

At present, we can distinguish three types of changes in industrial policy and its implementation.

**First**, there is a marked change in the attitude towards industrial policy, both in the academic and expert communities and at the level of national governments. If fifteen and twenty years ago, the attitude to industrial policy was "cold" and in its "classical" vertical form - there was a steady demand for horizontal policy aimed at re-industrialization, sustainable innovative development, improvement of national innovative systems, and elimination of systemic failures. In recent years, there are clear aspirations to develop cooperation and mutual relations between different agents, search for new sources of sustainable growth, transition to a technological industrial policy related to increasing the contribution of the education sector to economic development.



**Secondly**, important changes are taking place during the implementation of industrial policy:

- the orientation of the economy to man and his needs is increasing, the role and importance of the final consumer in economic processes is increasing. As a result, consideration of the population, its beliefs and feelings is becoming an important tool for policy implementation;
- technological changes in many industries and fields of activity, which allow us to talk about the beginning of the fourth industrial revolution, cause high uncertainty and abstractness of the future, not only in the long term, but also in the medium term ;
- generational change is playing an important role not only in consumption, but also in behavior, value orientations, etc.;
- the interest of the state, society and business in certain areas and, as a result, the flow of funds, labor resources and the activation of entrepreneurship are increasingly determined by "fashion", which reflects dominant ideas about the prospects of certain industries and spheres of activity;
- urbanization leads to an increase in the "density" of various economic agents, which creates new opportunities for cooperation and cooperation, as well as new problems and threats.

**Third**, industrial policy itself is changing significantly:

- convergence of industrial and innovation policy was realized, and innovation policy became an important organizer of industrial policy. After the crisis of 2008-2009, industrial policy is recognized in most cases as a systematic, coordinating component of public policy;
- one of the most important elements of the industrial policy is the policy related to the organizational aspects of the industry (market position of companies, optimal size of firms, value chains). This, in turn, is related to the revision of the position of natural monopolies, the development of technical regulation;
- industrial policy is becoming more complicated, the demand for "smart" tools is increasing, their application requires great effort and potential. In this case, the issue of supporting scientific capacity networks and protecting them from external threats is of urgent importance [2].

There is a growing need for industrial policy across the world and also by national governments and local authorities in various national economies. Industrially developed countries are trying to increase the rate of sustainable economic growth with its help in the post-crisis period, while developing countries are using industrial policy to overcome or avoid the middle-income trap, and at the same time, to technologically update a number of industries. In

particular, the Persian Gulf countries recognize industrial policy as a means of diversifying the national economy, while a number of African countries value the importance of industrial policy in fighting poverty.

**LITERATURE ANALYSIS.** Despite the urgency of the problem of implementing structural policy and ensuring economic growth in the national economy on this basis, this problem has not been thoroughly studied. Some aspects of ensuring economic growth in the country based on the implementation of structural policy J.M. Keynes, J. Itwell, R. It is reflected in the scientific works of foreign scientists such as Prebisch [3]. In the scientific works of these economist-scientists, the industrial policy based on the organization of import-substituting productions and the issues of ensuring economic growth in the national economy on this basis were considered from the point of view of the conditions of the market economy.

Kh.P. Abulqosimov, A.V. Vahabov, T.T. among the economists of our country. Jo'raev, A.A. Olmasov, A.V. Vahobov, S.V. Chepel [4], R.R. Khasanov, Sh.G. Yuldashev, F.T. Egamberdiev [5], U.A. Madrahimov [6], G.N. It is possible to cite promising research works of Makhmudova [7] and others in this field.

At the same time, the analysis of the studied works shows that issues such as the incentive mechanisms of the structural policy in the transitional economy have not been resolved, and many proposals for improving the country's economic development are still controversial. In addition, the priorities and mechanisms of structural policy implementation in the conditions of the transition economy in general have not been fully and deeply studied.

**RESEARCH METHODOLOGY.** Methods such as statistical analysis, generalization, grouping, classification, comparative analysis and mutual comparison were used in the research process.

**ANALYSIS AND RESULTS.** For modern Uzbekistan, the experience of implementing industrial policy in the BRIC (Brazil, China, India) countries is important, because the national economy of these countries is characterized to a certain extent by aspects specific to the economy of our country, and today, the government of these countries, as we have, the efficiency of industrial production there are urgent issues such as further improvement, ensuring the global competitiveness of national companies, large-scale introduction of new technologies and innovations. To date, two of these countries - Brazil and China - are at a new stage of industrial policy, and the third - India, is in the process of extensive discussion of the relevant policy (see Table 1). In all three countries under consideration, the goals and objectives of industrial policy implementation are significantly different from each other.



**Table 1.**  
**A new phase of industrial policy implementation in Brazil, China and India**

Country	Previous industrial policy			Factors of formation of new industrial policy	New Industrial Policy		
	Program (initiatives)	Type	Main aspect and edges		Program (initiatives)	Type	Main aspect and edges
Brazil	- industrial, technological and foreign trade policy; - production development policy; -The grand plan for the development of Brazil	A mix	- investment, innovation and export support; - a large number of priorities; -wide use of financial instruments; - ineffective coordination; lack of independent assessment	insufficient efficiency of a large number of enterprises and productions	A more productive and efficient Brazil	horizontal	-supporting all types of enterprises, primarily small business and private entrepreneurship; -consultative support for the introduction of low-cost innovations and developments
India	Industrial Policy-1991	Horizontal	Development of private entrepreneurship, attraction of foreign investments, liberalization and internationalization of the economy	presence of significant restrictions on industrial development (infrastructural, regulatory, etc.).	Industrial policy-2017	during the discussion	
China	Programs for the development of new strategic industries	Market	- identification of technological areas with great growth potential and impact on long-term socio-economic development; - providing long-term guidance for national and local authorities	insufficient level of development and industrial base in terms of materials, components and technologies	Made in China-2025	mixed, in which the vertical type of policy is somewhat dominant	- a layered system of goals and objectives until 2049, when the ultimate goal is to make China the world's industrial leader - a mutual harmony of support for new and traditional networks -introduction of new advanced technologies, improvement of production quality, resource efficiency and "green" development, optimization of industrial structure, special attention to use and development of talents



**Brazil** is related to the new political forces that came to power, and it is also explained by the fact that the previously implemented programs did not provide the intended results in order to ensure the efficient and sustainable growth of the industrial sectors, especially the processing sectors. Unlike previous programs based on a combination of vertical and horizontal instruments, which were practically oriented to big business and involved large-scale state and "quasi-state" investments (in most cases, these investments were financed through the National Development Bank - BNDES), modern industrial policy is clearly visible. Having a horizontal description, it is distinguished by its focus on providing consulting support to small and medium-sized enterprises.

Between 2003 and 2015, Brazil implemented three large-scale industrial development programs at the national level, consecutively:

- PITCE – Política Industrial, Tecnológica e de Comércio Exterior (Industrial, technological and foreign trade policy). The implemented policy aims to improve the business environment, support small and medium-sized businesses, support innovation and export in a number of traditional industries (heavy industry, electronics, pharmaceutical industry) and encourage new promising (biotechnology, nanotechnology, renewable energy) industries. requires mutual coordination of measures;

PDP - Política de Desenvolvimento Produtivo (Production Development Policy) is distinguished by the fact that it has a clear anti-crisis character, implemented in the context of the global financial and economic crisis. Measures to implement this policy include investment, innovation and export promotion. The production development policy covers sectors from mining to information and communication technologies and healthcare, which are important for the country's economy, and the projects are funded by BNDES ( Banco Nacional de Desenvolvimento Econômico e Social ) loans and by the state . financed through direct financing;

- PBM Plano Brasil Maior . The main direction of the policy was aimed at increasing the competitiveness of national producers in the domestic and foreign markets. This policy includes financial support for research and development through the special program Plano Inova Empresa (innovative enterprise plan), providing subsidies to manufacturers to reduce production costs, reducing taxes on the labor compensation fund, as well as the state ownership of national production products. includes handles such as shopping by.

It should be noted that all these programs have covered many sectors and sectors, combining vertical and horizontal measures. Among the general shortcomings of the mentioned programs, we can

include insufficient effective coordination of the actions of the ministries and agencies involved in the implementation of the measures provided for in the framework of the policy, excessively unclear priorities, and the absence of an independent evaluation and monitoring system.

In 2017, M. After the election of Temer, the BMP – Brasil Más Productivo (More Productive Brazil) program was launched. The fact that this program, without being tied to one or another branch, has a clear horizontal description, and is aimed primarily at small and medium-sized enterprises, as well as the country's enterprises, in order to improve production processes and introduce sufficiently simple and low-cost innovations into production. characterized by

The import-substitution economic model of industrialization used in Brazil not only contributed to the development of the national industry, but also led to the closure of the country's domestic market, backwardness in the use of new technologies, stagnation of production, and a further decrease in national competitiveness [8].

The experience of Brazil and a number of other developing countries shows that the policy of import substitution should not be based on complete autarky and cutting off relations with the outside world. Sufficiently rational use of foreign economic policy instruments is required. In addition, the principles of international economic integration should not be undermined, as it should create the basis for the formation of an export-oriented economy in the long term.

**India** , the new industrial policy announced in 1991 envisaged a number of large-scale reforms aimed at decentralization, liberalization and internationalization of the economy, attraction of foreign investments and development of private enterprise. Among its main directions are the abolition of licensing in many sectors and areas of activity ( except for some strategic sectors), relaxation of state control of direct investments and opening the way for the free entry of private capital into a number of sectors, expansion of technology transfer opportunities, development of anti-monopoly regulation, we can also include such things as state promotion of scientific and industrial cooperation. The adopted measures ensured a significant flow of foreign investments and increased the participation of private capital in a number of sectors, significantly increasing the efficiency of the corporate sector in general, and greatly contributed to the promotion of the growth of the export of national products and services [9]. However, despite the achieved results, the opportunities for further development of Indian industry are insufficiently developed and low efficiency of the existing infrastructure, complex and excessive regulatory





methods that negatively affect the business environment in a number of areas are preserved, innovations and R&Ds are not financed at the required level, new is limited by the relatively slow adoption of technologies, the low productivity of the processing industry, as well as the existence of declining demand and stagnant conditions in many traditional markets. In this regard, within the framework of the Ministry of Trade and Industry, new initiatives and plans in the field of industrial policy aimed at increasing the competitiveness of the national industry at the world level are being widely discussed. The main goals of the policy are to create global brands of Indian products, to increase the amount of added value created in the country and to expand the attraction of advanced foreign technology and innovations along with foreign capital; increasing the competitiveness of the national industry by reducing expenses related to the use of infrastructure, primarily energy and transport infrastructure, using new technologies, and increasing labor productivity due to the reduction of administrative costs; use of the opportunities arising due to the growth of the working population; rational use of natural resources, use of "clean" technologies and, in general, ensuring a reasonable balance between industrial development and environmental protection; the development of international relations at the expense of the development of the technology and innovation ecosystem is envisaged (Ministry of Commerce and Industry, 2017).

**China, the new industrial development program that is currently being implemented** does not limit the implementation of the regulations that were previously adopted at the higher government level to encourage promising industries, but on the contrary, considering them as their logical continuation, the government will further support the industries, define promising technological directions. is important in obtaining.

At the same time, according to government officials, the main idea of adopting new programs is also considered unsatisfactory because it cannot adequately respond to the supply of national industries with their technologies, components and materials (State Council, 2015).

In 2010, in order to develop a modern economy on the basis of advanced technologies, the State Council of China recognized the primary importance of long-term socio-economic development, as well as having great potential and advantage in ensuring technological progress, characterized by the consumption of relatively few material resources, knowledge and technologies. a decision was made on the rapid development of new strategic industries that are active users. Document 7: energy efficiency and environmental protection, new generation of

information technologies, production of high-quality equipment, alternative energy, biotechnologies, new materials, vehicles running on new energy sources, and the target of their share in GDP. notes that its value will be in the range of 8-15% between 2015 and 2025. In practice, the decision of the State Council is significant in that it sets specific priorities for the state authorities regarding the development of coordination measures regarding the financing of R&Ds, personnel training, and taxation. In 2015, the PRC government launched the "Made in China 2025" program, designed to address the country's weak industrial base in key components and materials and advanced technologies. As with the development of new strategic industries, the program sets a target for key components and materials that can be produced domestically. The program reflects a layered system of goals and objectives, and the final strategic goal is to make the country one of the leaders among industrialized countries by 2049. The main principles of the implemented policy are the development of industry based on innovation, improvement of production quality and efficiency, "green" development, optimization of industrial composition, development based on talent. The program defines 10 sectoral and technological priorities, most of which, along with new strategic sectors, are inextricably linked with traditional sectors that are already considered important, in particular, aerospace and aviation industry, electrical equipment production and agricultural machinery. is considered The directions and measures of the implementation of the program are very wide, in particular, it includes the improvement of the mechanisms of conducting joint research with the participation of the state, industry, education and science; reform of state-owned enterprises, ending the monopoly of industrial enterprises, development of mixed ownership and abolition of unjustified restrictions on the participation of private capital; expanding the channels of financial support for industry and reducing the cost of capital, stimulating the activities of the Export-Import Bank of China, the China Development Bank and financial organizations for financing the activities of industrial enterprises, encouraging venture financing of innovative projects in industry, assisting the modernization of industrial sectors through leasing, large companies support of pilot projects; development of the state procurement system in order to support innovative enterprises; effective use of tax incentives for industrial development, improvement of accounting of R&D expenses to reduce the tax burden on industrial enterprises; development of a system of measures supporting small and medium-sized businesses from a tax and financial perspective; includes development of



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training of specialists in technical and management fields, improvement of talent development system.



**Table 2.**  
**China's Industrial Policy Initiatives for 2010 and Beyond**

<b>Initiatives</b>	<b>Implementation period</b>	<b>Purpose, mission, main aspects</b>	<b>Priorities</b>	<b>Means</b>
Decision on rapid development of new strategic industries	2010-2025	<ul style="list-style-type: none"> <li>- the goal is to ensure the well-being of society in all respects and ensure sustainable development.</li> <li>- tasks: formation of new points of economic growth, creation of jobs, full and better satisfaction of the growing material and cultural needs of the population, formation of a society aimed at saving resources and protecting the environment</li> <li>- production volume of indicator-strategic industries should be 8% of GDP in 2015 and 15% in 2025.</li> <li>- development of strategic industries is carried out on the basis of the country's own R&amp;D and innovations</li> </ul>	<ul style="list-style-type: none"> <li>- energy efficiency increase and environment _ protection</li> <li>- new generation information and communication technologies</li> <li>- biotechnologies</li> <li>- production of high-precision equipment</li> <li>- new energy</li> <li>- new materials</li> <li>- cars running on new energy sources</li> </ul>	<ul style="list-style-type: none"> <li>- carried out by national and local authorities using existing tools and measures</li> <li>- general leadership is carried out by the National Commission for the Development of Reforms</li> </ul>
"Made in China 2025" program	2015-2025	<ul style="list-style-type: none"> <li>- The goal for the period up to 2025 is to make China a leading industrialized country</li> <li>- Tasks until 2020: industrialization, strengthening of production capabilities, digitalization, industry networking and informatization, mastering key technologies in core areas, increasing China's competitiveness in global leadership areas, significantly improving product quality, reducing energy, material capacity, and waste</li> <li>- Tasks until 2025: significantly increase product quality, labor productivity, develop the innovative potential of industry, achieve a high level of information technology integration, reach the level of developed countries in terms of energy, material capacity and waste, improve China's position in the international division of</li> </ul>	<ul style="list-style-type: none"> <li>- new generation information technologies</li> <li>- high precision digital controls and robotics</li> <li>- aerospace and aviation engineering</li> <li>- marine engineering equipment and high-tech shipbuilding</li> <li>- promising railway engineering</li> <li>- cars using new energy sources and with high energy efficiency</li> <li>- electrical equipment</li> <li>- agricultural machinery</li> <li>- new materials</li> <li>- biopharmaceuticals and high performance medical devices</li> </ul>	<ul style="list-style-type: none"> <li>- improvement of the mechanisms of joint scientific research with the participation of the state, industry, education and science.</li> <li>- reform of state-owned companies, separation of industrial monopolies, development of mixed ownership and abolition of irrational restrictions on the participation of private capital</li> <li>- expanding the channels of financial support to the industry</li> <li>- encouraging the activities of state and other financial organizations in financing the activities of industrial enterprises</li> <li>- encourage venture financing of innovative projects in the industry</li> <li>- supporting pilot</li> </ul>



		<p>labor, multinational companies that can compete in global markets and creation of industrial clusters;</p> <ul style="list-style-type: none"> <li>- Tasks until 2035: to ensure China's rightful place among the world's industrial countries, to significantly develop innovation potential, to make great leaps in key areas, to achieve China's global innovation leadership in areas with great competitive advantages</li> <li>- Tasks until 2049: leadership among the industrialized countries of the world, innovative leadership and competitive advantages in key production areas, development of forward-looking technologies and advanced production systems.</li> <li>- key indicator: increase the share of basic materials and components made in China to 40% in 2020 and 70% in 2025</li> <li>- main aspects: development of industry based on innovation; increase production quality and efficiency; "green" development; optimization of industrial composition, development by attracting talents</li> </ul>		<p>projects of large companies</p> <ul style="list-style-type: none"> <li>- development of the public procurement system to support innovation</li> <li>- use of tax incentives for industrial transformation, improvement of R&amp;D expenses calculation in order to reduce the tax burden for enterprises</li> <li>- implementation of measures to support small and medium-sized businesses through financial and tax means</li> <li>- development of professional training in technical and managerial fields, improvement of talent development system</li> </ul>
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Source: NIU VShE (2018). Structural changes in the Russian economy and structural politics. Analytic document. / [ Simachev Yu., Akindinova N., Yakovlev A., Kuzyk M., Mironov V., Bessonov V., Daniltsev A., Glazatova M., Vishnevsky K., Kutsenko E., Medovnikov D., Rozmirovich S., Konovalova L., Pogrebnyak E., Freinkman L., Baranov E., Balashova E., Misikhina S., Nazarova A., Suvorov N., Chepel A., Chernyavsky A., Turovets Yu., Abashkin V., Islankina E. , Ivanov D.; *pod nauchnym rukovostom Yasina E.G.* ] **At the European level**, industrial policy is recognized as one of the priority areas of development

**Table 3.**  
**The main directions of the structural (industrial) policy of the European Union (2017**

<b>Industry</b>	<b>Document or initiatives</b>
<b>Vertical</b>	
Universe	Space Strategy
Defense complex	European Defense Fund ( European Defense Fund)
Automobile industry	Europe on the Move initiative, limits on the amount of toxic emissions from cars, GEAR2030.
Steel production	EU Communiqué on Steel
<b>Horizontal</b>	
Investments	European Investment Plan (Juncker Plan), Capital Markets Association
Protection from foreign investment	Strengthening restrictions on the entry of foreign direct investors into the EU markets
Digital capabilities	Digital Single Market, Center for Cyber Security, Digitalization of Industry, Plan for 5G Networks .
Ecology	"Circular Economy" - measures for processing plastic waste, production of bioresources, use of biomaterials and biofuels
State procurement system	Introducing new voluntary standards for information disclosure during procurement of major infrastructure projects
Intellectual property and standardization	Various measures to expand the protection of intellectual property rights of startups and small businesses
CO2 _ reduce the output	Strengthening standards for reducing exhaust gas emissions from cars, developing infrastructure for powering electric cars
Production resources	Publish the list of the most important imported materials and the names of the countries from which they originate (78 goods in 2017), take measures to ensure the continuity of imports
Skilled labor	Expanding the use of the New Skills Agenda in new sectors

Source: NIU VShE (2018). Structural changes in the Russian economy and structural politics. Analytic document. / [ Simachev Yu., Akindinova N., Yakovlev A., Kuzyk M., Mironov V., Bessonov V., Daniltsev A., Glazatova M., Vishnevsky K., Kutsenko E., Medovnikov D., Rozmirovich S., Konovalova L., Pogrebnyak E., Freinkman L., Baranov E., Balashova E., Misikhina S., Nazarova A., Suvorov N., Chepel A., Chernyavsky A., Turovets Yu., Abashkin V., Islankina E. , Ivanov D.; *pod nauchnym rukovostom Yasina E.G.* ]

This policy will enable European industry to "be at the forefront of innovation, digitization and decarbonisation" (European Commission President J. Juncker 's 2017 annual address). The policy announced in 2017 includes a number of initiatives already implemented by the European Union. A consolidated document on the new industrial policy is a special communication of the European Commission, namely "A renewed EU Industrial Policy Strategy – European Commission, 2017a". Due to the specific aspects of management at the EU level, while this

document has a guideline description, its main aspects are defined in individual programs and projects. A similar comprehensive guidance document was adopted in 2010 and was called "Integrated Industrial Policy for the Globalization Era". The individual initiatives of the European Union industrial policy adopted for 2010 were also reflected in the documents of 2017 in order to ensure the continuity of the industrial policy. Historically, the major countries of Western Europe (except Germany) used vertical selective policy measures after the Second World War until the 1980s, and in the later periods they mostly used horizontal policy measures (Owen, 2012). Within the existing antitrust rules of the single market, priority is given to horizontal activities. The updated strategy of the European Union's industrial policy for 2017 includes a number of horizontal measures as well as a set of sectoral measures (Table 3).

In Europe, the most important and famous national initiatives in the field of industrial policy belong to Germany, France, Great Britain. For



example, these countries, while initially actively participating in the selection of key advanced technologies (KETs), also promote alternative approaches to industrial policy formation. All of these countries have highly adopted documents on technology policy (Germany) and industrial policy (France, UK). In Germany, the Digitalization of Industry 4.0 program is the most mentioned, while in France and Great Britain, more comprehensive programs of network policy are widely used.

**Germany** is one of the technological leaders in Europe, it is characterized by a large layer of medium-sized enterprises actively participating in the introduction of innovative developments and advanced technologies in the industrial sector, a unique system of personnel training that allows professional training in production, as well as the development of scientific circles and industrial interaction. (e.g. Fraunhofer has been active since 1949 with a background of introducing applied scientific developments in the interests of industry).

Germany's Industry 4.0 program (Industrie 4.0) is considered one of the most popular initiatives to digitize production in Europe and worldwide. From the beginning, the Industry 4.0 program is a component of the High-Tech Strategy Action Plan approved by the German government in 2010. On the recommendation of business and scientific organizations, in addition to the Industry 4.0 program, the government has identified 10 more projects, including:

- Energy-saving cities with a neutral balance of CO<sub>2</sub> emissions;

- renewable biomaterials as an alternative to oil;
- "smart restructuring" of energy supply;
- health care (personalized medicine; improving health through prevention and optimized nutrition, active lifestyle in old age);
- sustainable mobility (transport, infrastructure, logistics);
- internet services for business;
- protection of personal integrity.

The deep integration of trade union activities and the presence of a wide range of actors alongside the executive authorities is a distinctive feature of industrial policy in Germany. In 2013, the main German business associations (BITKOM, VDMA ZVEI) created the Industry 4.0 platform, which today has more than 300 participants from about 160 organizations. In 2015, the platform was supported by the Ministry of Economy and Energy, the Ministry of Education and Research and allocated 200 million euros.

The main goal of the Industry 4.0 program is the deeper introduction of information technologies into traditional industrial production. Although there is a lag in the creation and commercialization of information technologies, the starting point for the program is to ensure Germany's technological leadership in mechanical engineering, chemical industry and other such traditional high-tech industries.

**Table 4.**  
**Modern structure in the main countries of the European Union**  
**(industrial policy)**

<b>Description</b>	<b>Germany</b>	<b>France</b>	<b>Great Britain</b>
The main threats	Falling behind in terms of information technology	Vulnerability of the small and medium enterprise class. Traditionally, the dependence of large companies on the state	Deindustrialization, loss of national champions, backwardness in terms of labor productivity
Positive conditions	A strong layer of medium enterprises	Literate technical bureaucracy, experience of large industrial projects.	Active start-ups, flow of foreign investments
The program document to be analyzed	Industry 4.0	Grand Investment Plan/Newly Industrialized France	Industrial Strategy (2017)
Select network or issues	Along with Industrie 4.0 , the high-tech strategy covers 10 areas. Industrie 4.0 includes 8 subtasks	CPI: 25 specific initiatives across 4 categories	5 main areas of work, several sub-plans by sectors
Numbering	Top priority	One of the priorities is the digitization of public administration	Infrastructure support and retraining



Platform (alliance of interested organizations)	Industry 4.0 platform	Future Industry Alliance	No
Specialized financial institute	There is no specialized bank, partly KfW	BPI, partly CDC	British Business Bank
Strengths	Developed standards are internationally recognized, a strong international brand	Transparent system of budget expenses	Transparency of advisory and strategy development processes. Independent assessment offices are envisaged
Weaknesses	Gross digitization of production can be ineffective	Weakness of the project reporting system, lack of public information	Brexit deal is having a major negative impact, with a focus on productivity lag in low-tech industries.

Source: Compiled from open internet data.

The goals of the program are grouped according to the following priorities: standardization, management of complex production systems, high-speed Internet connection, information security, efficient organization of production and labor, training of personnel, changes in the regulatory legal framework (especially protection of intellectual

property rights and data exchange from the point of view), resource saving.

the informatization of the entire cycle of product creation, production and maintenance, reducing the costs of integration between different information systems and ultimately increasing production efficiency and competitiveness.

**Table 5.**  
**Major initiatives of the major investment plan**

<b>Initiatives</b>	<b>Budget, billion euros</b>
<b>Acceleration of ecological development</b>	
Improving energy efficiency in social buildings and housing for low-income people	9.0
Development of the transport system and reduction of transport emissions	4.1
Increasing the production of renewable energy and developing smart and sustainable energy supply systems in cities, changing the behavior of people and businesses in the field of energy consumption	7.0
<b>Promoting skills and employment</b>	
2 million from low-skilled employees. help to employ people and increase their qualifications, reduce the level of unemployment in this category (currently 18%)	13.9
Innovations in the educational system	0.3
Changes in the system of pre-university education aimed at improving the professional integration of students in the first years of higher education and reducing the dropout rate of students	0.4
<b>Supporting competitiveness through innovation</b>	
University and research support	
Support innovation in industrial and service companies, encourage high-risk investments in promising areas such as artificial intelligence, big data processing, nanotechnology and cyber security	
New technologies in agriculture, fisheries and forestry, food industry	
<b>Creating a digital state</b>	
Digital services that provide long-term savings in government spending, transition to full digital services by 2022	4.4
Digitization of health care, which allows to overcome the shortage of medical personnel, re-equip medical facilities and support medical research	4.9



Source: NIU VSHE (2018). Structural changes in the Russian economy and structural politics. Analytic document. / [ Simachev Yu., Akindinova N., Yakovlev A., Kuzyk M., Mironov V., Bessonov V., Daniltsev A., Glazatova M., Vishnevsky K., Kutsenko E., Medovnikov D., Rozmirovich S., Konovalova L., Pogrebnyak E., Freinkman L., Baranov E., Balashova E., Misikhina S., Nazarova A., Suvorov N., Chepel A., Chernyavsky A., Turovets Yu., Abashkin V., Islankina E. , Ivanov D.; *pod nauchnym rukovostom Yasina E.G.* ]

**France** is known for its indicative planning system, which has been in use since the post-war period, and has long supported the development of large companies - "national champions". Most of these companies were created in sectors where the state has a strong influence on the development of the market - atomic energy, aerospace, railway engineering, and telecommunications. It should be noted that while in some areas it has been possible to create companies that can compete globally or in the Eurozone, some initiatives have also failed. With a strong technological base embodied in large enterprises, France has been systematically trying to implement various forms of industrial policy. The New Industrialized France program (Nouvelle France Industrielle) was launched in 2013 by President F. Hollande, and its purpose is to carry out consultative activities in agreement with market participants on the analysis of opportunities and growth barriers within the framework of 34 promising technological sectors identified in cooperation with the international consultant McKinsey. According to the consultants' calculations, these 34 directions will create 480,000 new jobs and 45.5 billion dollars in the country until 2023. A dollar can create added value, 40 percent of which can be created at the expense of exports. In this regard, a specific feature of work organization is expressed in attaching a specific leader from the field of business or public administration to the direction.

In 2015, the Minister of Economy and today the President of the country E. The 34 directions envisaged by Macron in the first stage of the program are replaced by the second stage of the program and "9 industrial solutions" (digital economy, smart objects, digital trust, smart food production, new resources, sustainable urban development, eco-mobility, medicine of the future, transportation of tomorrow) were presented.

The French government announced in 2017 the current phase of the newly industrialized France program, called Le Grand plan d'investissement, GPI, for 2018-2022. The total budget of this plan is 57 billion. equal to the euro. The main directions of this plan are as follows:

- acceleration of ecological development (20 billion euros);

- supporting skills and employment (€15 billion);
- supporting competitiveness through innovation (13 billion euros);
- creation of a digital state (9 billion euros).

At the end of 2017, **the UK** published an 'industrial strategy', setting out structural policy measures, following a sixteen-month consultation process. The paper is problem-oriented and answers complex questions about the development of new networks and markets.

Great Britain is distinguished by high transparency of the process of development of "industrial strategy". The draft documents were submitted for public consultation approximately 9 months before the strategy was adopted and published as a document with a consultative nature - 9 months before the strategy was published it was published as a consultation document (HM Government, 2017a). As a rule, interested parties had the opportunity to express their opinions on the document electronically, in addition, it passed parliamentary hearings, was actively discussed in the press and in the expert community. In 2018, an independent Industrial Strategy Council (Industrial Strategy Council) was established, which is responsible for developing a methodology for evaluating the results of program implementation.

"Industrial strategy" measures are grouped around the following areas: "ideas", "people", "infrastructure", "business environment", "place" (ideas, people, infrastructure, business environment, places). The measures are aimed at increasing labor productivity in economic sectors and respond to four "big threats" (challenges to society and the development of new markets): the development of artificial intelligence and the data economy, clean growth (reducing pollution and carbon dioxide emissions), future mobility (transport and urban infrastructure, electric cars), aging of society (health and social systems).

As sub-programs of the strategy, network blocks formed today in the fields of automobile industry, construction, artificial intelligence and biotechnology (life sciences) have been singled out.

During the implementation of the program, the share of R&D expenses in the country's gross domestic product will be increased to 2.4% by 2027, in addition, the volume of investments in the new Industrial Strategy Challenge Fund will be 725 million. intended to be delivered to the pound.

In the context of the diversity of experience gained by different countries in the implementation of industrial policy in various sectors and fields, the tasks to be solved and the differences in the approaches





used, we can single out the common aspects that are typical for any successfully implemented industrial policy:

- clearly stating tasks, clarifying the role of the state and other participants in solving these tasks;
- availability of "non-interference assessment" in the event of non-implementation of the planned policy;
- to distinguish market failures in the field of policy implementation in the market, to analyze how the policy contributes to their reduction or elimination;
- assessment of the impact of the implemented policy on the level of competition, in the presence of a significant negative impact - the development of compensatory measures;
- the results of industrial policy - ensuring rational integration of organized production and services, developing industrial sectors into global added value chains;
- maintaining the stability of the results achieved after the active phase of policy implementation.

**CONCLUSIONS AND RECOMMENDATIONS.** In addition to the factors listed above, special attention should be paid to three conditions that significantly determine the success of modern industrial policy, which are relatively rarely the focus of attention of the state and experts.

**First of all**, an important condition for the success of the industrial policy is the compliance with the current level of the state's organizational capabilities and powers in the person of the bodies directly involved in its implementation. Otherwise, even an in-depth analysis of industrial policy and its "smart" design will not be able to solve the problem of insufficient quality of public administration. At the same time, the creation of new technologies and networks, often requiring the development of new approaches, mechanisms and solutions, put significantly higher demands on the public administration system .

**Second**, industrial policy—even in relatively simple forms based on well-known technologies and solutions—always involves miscalculations and errors. None of the industrial policies that have been successfully implemented have been smooth sailing. At the same time, no matter how many opportunities and powers the state has, the probability of failure increases as politics becomes more complex.

During the implementation of the industrial policy, the state should draw conclusions from mistakes, be ready to make timely adjustments to the implemented measures - activities and programs. This,

in turn, requires monitoring the progress of policy implementation and evaluating the results achieved. Best practices for such assessments include:

- to identify and analyze indirect effects, delayed results, as well as changes in the behavior of economic agents, along with the direct results of the implemented measures;
- identify changes and impacts that would not occur if current policies were not implemented.

**Thirdly**, the conditions for the implementation of a successful industrial policy vary depending on the level of development of countries. In particular, in low-income countries, secondary education and political institutions are considered important for the successful implementation of industrial policy, while in middle-income countries, technological development and higher education are considered important.

In general, we should note that the success of the industrial policy implemented in one or another country largely depends on many factors, such as the socio-economic situation in the country, the supportive policy of the state. Based on the above, we make the following conclusions:

1. The need for industrial policy does not diminish over time, as it is used to solve different tasks in different countries, and the approaches, tools and justifications used in this case also change. After the crisis of 2008-2009, views on state intervention in the economy changed significantly, focusing on the widespread use of "smart" instruments by the state.

2. In recent years, progressive changes in the conditions for the formation and implementation of industrial policy have become more evident. Thus, technological changes initiated in a number of sectors and industries lead to a high level of uncertainty and are combined with an increase in information asymmetry between the main actors involved in the process of industrial policy implementation: the state, business, science and society. Against the background of the widespread "noisy" model of innovation, the risk of a "bubble" in areas where rapid development is expected increases. Taking into account the increasing orientation of the economy to man, his demands and needs, the factor of dominant ideas in society is becoming more and more important; accordingly, control of public opinion, creation of public phobias and similar threats.

3. In recent years, digitization programs have been implemented at the national level in most industrialized and newly industrialized countries. Most of these programs are a specific analogue of the German Industry 4.0 program. Typically, such programs are focused on a wide range of participants, their coordination, demonstration effects, and



attracting business funds, and involve relatively little funding at the national level.

4. Cyclicity in the formulation and implementation of industrial policy is usually evident in relation to political cycles – this is especially typical for developing (Brazil) and industrialized countries (France, Germany). At the same time, new programs and initiatives are almost always focused on newly announced tasks and challenges and are characterized by less connection to the implementation logic and results of previous programs.

5. Conventional industrial policy options, usually based on off-the-shelf solutions, approaches and technologies developed in other countries or in other sectors, involve relatively fewer risks and promise relatively less progress in achieving global or local industrial leadership. A more complex policy that requires the development of new solutions and technologies provides greater success, but at the same time it involves greater risks and makes more serious demands on the public administration system.

6. Of course, even in its relatively simple variants, industrial policy is inevitably made by trial and error. Especially in the implementation of the industrial policy related to the search and testing of new approaches and solutions, the state should be prepared for any failures. At the same time, independent policy analysis and monitoring is required. Errors and defects detected in time provide valuable information for corrections and additions to ongoing activities, as well as for future initiatives.

7. it is required to develop a unique design of industrial policy based on existing conditions, opportunities and limitations, set goals and tasks.

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