



# The Essence and Significance of Modern Industrial Policy

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## Abstract

The subject of the study is the transformation of the features of implementation of industrial policy in the modern economy at different levels of interaction between government and business. The article is devoted to changes in industrial development and the corresponding transformation of the tools of industrial policy in the development of import substitution. The study is aimed at determining the relationships between the directions and levels of implementation of industrial policy in accordance with the system analysis and identifying the key features of the relationship between business structures and the state. The theories of industrial development and the concepts of resource and process approaches to industrial development and implementation of innovative industrial policy served as the methodological basis of the study. The study used the methods of system analysis and synthesis in identifying the key relationships between business structures and the state in achieving the goals of industrial development. The study defines the transformation of the types, tools and system of indicators of industrial policy under the sanctioning pressure on the economy, identifies the possibilities of using the matrix system in the management of industrial development, implemented at three levels (macroeconomic, meso-economic, microeconomic) in the interaction of business structures and public authorities, assesses the possibility of forming and conducting conservative industrial policy in terms of lack of funding of scientific research. The results of the study can be used in assessing the priorities, directions and transformation of the tools used to implement an innovative model of industrial policy in the Russian economy, in the development of import substitution and the formation of new industries, to form an effective interaction of innovation process and the process of industrial development of the national economy. The state of modern economy is exposed to significant challenges from geopolitical risks and transformation of the process of industrial development, which requires determining the conditions for the implementation of modern industrial policy and changing directions and priorities of industrial development. Improvement of the ways of production, development of the system of social institutions takes place when solving the issues related to the development of science underlying the formation of new industries.



## Introduction

When considering the effectiveness of industrial policy in the economic system, it is necessary to take into account all the variety of types of industrial policy related to the objectives set and possible tools used. In fact, we can talk about three basic directions of industrial policy implementation.

Innovation policy, based on the interaction of research and innovation organizations and directly entrepreneurial structures. This policy is aimed at stimulating innovation activity, formation of an innovative model of the national economy, and utilization of the innovative mechanism of intensification of industrial and economic development.

Investment policy aimed at stimulating investment processes in the development of industry, formation and improvement of production infrastructure.

Structural policy based on the restructuring of the sectoral and regional structure of industry by ensuring the spillover of capital resources between territories, industries and sectors of the economy.

Provided that there are these three directions of industrial policy implementation, we can also define three levels at which industrial policy instruments can be formed, improved and act. At the microeconomic level, conditions for effective economic and production activities of enterprises and organizations should be formed on the basis of the freedom of economic agents. At this level, industrial policy implements tools for resolving disputes between economic agents, as well as regulates the processes of mergers and acquisitions.

At the meso-economic level, the mechanisms of functioning and development of vertical and horizontal production industrial complexes (at the territorial and transnational level) are formed and improved.

At the macroeconomic level, the general goals of industrial development are defined and implemented, and the issues of ensuring the achievement of these goals with appropriate financial, material and labor resources must be solved. At this level, the issues of interaction between industrial enterprises and the state are solved, the zones of influence of regions and territories on the solution of industrial development issues are determined, the legislative and regulatory framework at the federal and regional levels is formed.

The purpose of the study is to identify the interaction between the state and business structures in the framework of the implementation of directions, types and levels of industrial policy on the basis of system analysis and identification of key aspects of ensuring advanced industrial development. The identification of intersection points and areas of responsibility of the state and business within the framework of these three levels can actually be used (when specifying the set goals of industrial policy) to form and transform the overall strategy of industrial policy at the level of the national and regional economic system.

## Methods

It can be argued that industrial policy, based on the basic principles and implemented at different levels of the economic system, can take the forms of structural, investment and innovation policy. The coordination of industrial policy tools within the framework of harmonization of these basic directions is in

turn determined by the goals and objectives of industrial policy. Moreover, we can note the changes in the understanding of the term industrial policy over the past decades. If earlier industrial policy was perceived as direct actions of the state in the economic system and even some strict control over production and industry, nowadays industrial policy can be interpreted rather as a set of various economic policies of the state to concentrate capital in sectors and industries of the economy, to promote innovation and competitive development.

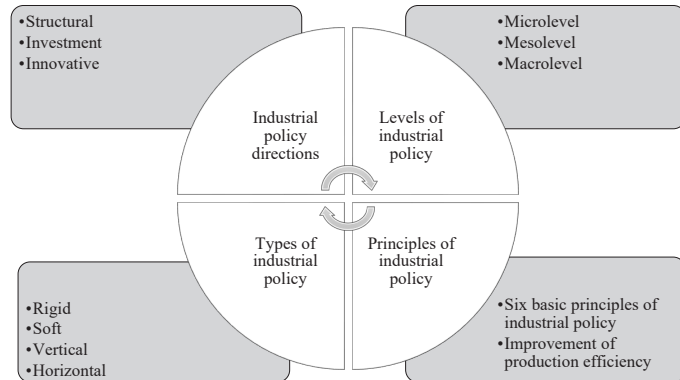
These changes actually demonstrate the real transition from a hard industrial policy to a soft version of its implementation. At the same time, whether the industrial policy is hard or soft is determined by the tools used to achieve its goals at the federal or regional level. Accordingly, the notion of a new industrial policy is currently focused more and more on the problems of industrial development, the object of which are industries within the framework of effective management of technological capabilities and human competencies. The development of any industry is known to be influenced, among other factors, by management efficiency, professionalism of managers and the ability to adapt to changing conditions in a timely manner [1].

The interaction between industrial development and human competencies in turn is based on the basic principles of formation and development of human capital. In economic science, the first economists who described the theory of human capital were G. Becker and T. Schultz (Nobel Prize winners). In the period from 1960-1971 their first works [2] on this issue were published. Subsequently, the theory of human capital was developed by foreign economists Fisher S., Dornbusch R., Shmalenzi K. [3], Denison E. [4], Kendrick J. [5], as well as Russian scientists Dobrynin A.I., Dyatlov S.A., Tsyrenova E. D. [6], Korchagin Y. A. [7], Kapelyushnikov R. I. [8-10], Martsinkevich V. I. I. [11,12] and others. The first economists, founders of the theory of the resource concept of industrial development, can be considered to be scientists E. Penrose [13], B. Wernerfelt [14,15], R. Ramelt [16,17], D. Teece [18-20], J. Barney [21], K. Prahalad [22- 24] and others. In domestic economic science, this theory was developed by V. S. Katkalo [25], A. V. Bukhvalov [26,27].

In accordance with the evolutionary changes in the understanding of the essence of industrial policy, it can be noted that traditional industrial policy, which directly affects the importance in the economy of individual enterprises and industries, is now called vertical industrial policy. If the scope of industrial policy includes general actions on legal, regulatory support of industrial activity, protection of property rights, removal of barriers or promotion of innovation process, then this type of industrial policy is called horizontal industrial policy. At the same time, government actions within the framework of horizontal industrial policy are common for a large number of business organizations, regulating in fact the processes occurring at the level of the whole industry or regulating the interaction between industries. Thus, the new industrial policy can be considered as a combination of levels, directions, principles and types of industrial policy of the state (Figure 1).

In fact, the need for industrial policy within the national economy is largely related to the need to develop new industries within the framework of innovative development. At the same time, there is a need to coordinate the development of various industries, enterprises, to form the direction and significance of investment flows, to form new technological chains and to improve the competitiveness of industry in the context of global competition. It is also necessary to take into account

the importance of the coordinating function of industrial policy, namely the combination of financing a number of industrial development processes or industrial enterprises themselves from the budget with the need to establish an investment flow of business structures in related industries. Competition between organizations that receive funding from the budget and organizations that receive funding on the basis of market processes should not lead to imbalance of the economic system and should be regulated with the participation of the state.



**Figure 1:** Structure of industrial policy.

Based on the above, and taking into account the problems of the national economy development at present we believe that on the basis of the need for this coordination and maintenance of competition we can distinguish such a type of industrial policy of the state as “conservative industrial policy”, combining the tools of industrial policy with the need for industrial policy itself to maintain such market functions as competition and pricing. This type of industrial policy is conservative in the sense of creating conditions for the development of import-substituting sectors of the economy. If in the conditions of globalization the goal of industrial policy is the formation of effective industrial development, then in the conditions of possible de-globalization the role of industrial policy in the framework of supporting influence on the preservation of industrial development requires a special toolkit. In fact, the conservative industrial policy on the one hand requires improvement of import substitution development processes on the basis of possible development of fallen industries in the conditions of economic sanctions.

On the other hand, this policy can be focused on the use of traditional tools of market economy (which is due to the need to develop import substitution not only within the current moment, but also to preserve these new industries even in the conditions of possible lifting of sanctions). The use of market instruments will avoid the creation of “greenhouse” conditions for these industries. Conservative industrial policy should actually be a system of goals and possible counterbalances that do not allow the very possibility of extraction of super-profits by non-market instruments due to the lack of competition.

Returning to the peculiarities of industrial policy implementation it should also be noted that industrial policy at the level of a separate region requires special consideration and formation of a general concept of the territory’s development. In this regard, it is possible to identify a number of separate tasks that should underlie the implementation of regional industrial policy:

Formation of long-term prospects and basic directions of the region’s development.

Forecasting changes in the resource base of the territory, analyzing and justifying key projects of the region’s development.

Realization of institutional transformations determining the prospects of the territory’s development in correlation with the set goals.

In accordance with the set objectives at the level of realization of regional industrial policy, it is necessary to pay attention to two main points.

At the regional level, the issues of social significance of the results of industrial policy are of particular importance. The development of new industrial centers, the creation and transformation of industrial enterprises directly affect the quality of life of the population in the region, the level of employment, the attractiveness of the region for subsequent investment. Social policy in this case overlaps with industrial policy, providing opportunities for economic development [28].

It is necessary to determine the level of development of key infrastructure on the territory of the region within the framework of ensuring the achievability of socially important goals. Financing of key infrastructure in this case requires its development above the level that would be achievable simply in a market economy (without government intervention).

In this case, it is necessary to identify several basic sources of financing the production of key infrastructure services in the framework of the implementation of territorial development projects:

The State’s budget.

User fees for key infrastructure services.

Funds of enterprises providing these services within the framework of granting these enterprises various monopoly privileges.

At the same time it should be understood that in this case we have to talk about services that the market will not produce in sufficient quantity. In this regard, user fees for these services will not be sufficient. The real way out of the situation is possible only on the basis of the use of all three sources of funding for the production of key infrastructure services. The use of the third source of financing in the framework of granting a number of monopoly rights to the producer will increase the prices for these services for those consumers who need these services (for those who will pay for them on a mandatory basis). The key infrastructure industries require the definition of their development goals, sources of their financing and fixing the mechanisms and tools for their development within the framework of the regional industrial policy concept being developed.

Thus, if the industrial policy at the federal level and regional level differs depending on the goals set, the toolkit of industrial policy within the region fits into the concept of regional industrial policy, while at the federal level the toolkit involves macro-economic levers, as well as the levers of fiscal policy.

The conditions and factors determining the features of effective industrial policy at the federal and regional levels are very diverse. Let us focus on the toolkit and the main methods of industrial policy implementation, as well as on which of these methods and tools are relevant to the current economic situation and can be involved in industrial development at the federal and regional levels.

Within the framework of the conducted research we have noted that the applied toolkit of industrial policy depends almost entirely on the goals that are set in the implementation of industrial policy. The applied methods of industrial policy also differ significantly depending on the goals set. At the present moment of time, the Russian economy is under serious sanctions pressure, which requires transformation of the used toolkit. Within the framework of our recommended new type of “conservative industrial policy” we need, on the one hand, to achieve the development of industrial sectors capable of ensuring the stable functioning of the economy, but on the other hand, while forming new industries at the same time it is necessary not to create “greenhouse conditions” for them, preventing their effective development in case of possible lifting of sanctions. Possible preservation of the industrial structure with the desire to support inefficient industries at the expense of cash injections from the state would be an extremely undesirable consequence of the transformation of industrial policy at present.

Let us pay attention to the main tools and methods of industrial policy, considering them in accordance with the general objectives of the state in the field of industry.

At realization of the classical industrial policy it is possible to state the presence of three basic methods of its **Realization**

Resource methods, which imply the possible use of credit and banking methods and budgetary and financial methods.

Institutional methods, among which we can actually separately consider normative and legal methods of industrial policy.

Organizational and economic methods of industrial policy.

In the implementation of industrial policy in this approach, the choice of one or another method is determined by the objectives set.

Accordingly, if the main goal set in the framework of industrial policy is to achieve macroeconomic priorities formed at the federal level, then in order to ensure the development of the economic system when emphasizing the application of fiscal methods the main attention should be paid to the development of science and education, which will require the financing of scientific research.

When implementing credit and budgetary methods, the priority in achieving the goals of industrial policy lies in innovative lending and the development of leasing. The use of legal and regulatory methods in the framework of industrial policy implementation implies the formation of a legislative base in the field of patenting and intellectual property protection. In turn, economic and organizational methods imply the possibility of using tax incentives, organization of leasing companies, financing of production by the state through guaranteed demand for the manufactured product. Also in this case we can talk about venture financing, organization of corporate structures that ensure effective industrial development.

However, setting appropriate goals of traditional industrial policy related to the development and preservation of economic potential cannot be realized without solving a number of initial tasks at the federal and regional level. Among the basic ones at present we can single out: Self-sufficiency in industrial products within the national economy. The solution of this task ensures the stability and independence of the economic system, including from possible sanctions pressure.

Formation of conditions for stable economic development and sustainable economic growth in the industrial sector of the economy.

Reorganization of the industrial structure in connection with the chosen development priorities and the current economic and political situation.

Creation of conditions for solving the problems of employment and adaptation of the population to the existing conditions in the industrial sector of the economy.

Compliance of the industrial policy with environmental standards.

The solution of these priority tasks, in turn, is determined by the possible tools of industrial policy and existing opportunities for development:

Formation of regulatory documents on the development of industry, on the implementation of production processes, on ensuring guaranteed demand from the state for the relevant products of production, on the regulation of monopolies and the creation of preferential tax regimes.

Formation of industrial development and industrial restructuring programs at the federal and regional levels.

Development of venture and investment lending.

Improvement of the toolkit of duties, quotas and tax benefits.

Formation and improvement of the system of social subsidies and guarantees, improvement of the system of unemployment benefits.

Improvement of the work of services for control over compliance with environmental standards, application of appropriate sanctions in case of violation of environmental standards in the implementation of industrial policy.

At the same time, it should be taken into account that industrial policy instruments can quite often be interpreted from different positions. If we are talking about the goal of achieving modernization of the national industry within the framework of intensification of the use of investment instruments, then this intensification can be understood as both intensification of investment activity of domestic companies abroad (within the international segment of friendly economic systems with minimal investment risks without the presence of a polytypical component of these risks) and intensification of the use of tools to attract additional investment in the national or regional economy. The activation of investment activity of national producers abroad was until recently considered unambiguously as an indicator of the success of enterprises without taking into account future possible political risks.

Firstly, such investment activity allowed for a fairly painless transfer of management and production technologies. Secondly, this investment activity allowed us to talk about the acquisition of a certain symbolic resource, which allowed us to reduce political risks of working in the international market. However, this approach to investment activity has changed considerably nowadays due to the current international political and economic situation. Moreover, the investment of resources in the acquisition of Western assets is now not only limited by objective conditions, but also such assets abroad have become an instrument of influence on national industrial companies.

When returning to the analysis of the toolkit of industrial policy, it should be noted that while a number of elements of industrial policy have been known since the 17th century, but the greatest development of the toolkit and methods of application of industrial policy could only reach in the 20th century, when, as part of its implementation, the following main objectives were defined as basic:

Stimulating the development of the national economic system by supporting either the entire sphere of industrial production or certain key elements of industry (some selected industries);

Guaranteeing external security and increasing the importance of the national economy in the world.

In accordance with the above, it can be argued that if initially industrial policy was formed and implemented at the national level, then later the goals, methods and tools of industrial policy at the regional level began to be formed.

The classical methods of industrial policy realization include:

**Protectionism:** It is possible to achieve the set goals by regulating tax incentives and duties, as well as by administrative regulation of international trade (in this case, the methods of regulation may also include the regulation of the exchange rate).

**Export stimulation:** It is possible to achieve the set goals through direct subsidies or indirectly through currency regulation and regulation of prices for factors of production within the economic system (which can be used, but at the same time violates the laws of free pricing, which will require further actions when this regulation is abolished).

General regulation of prices and tariffs in the sphere of regulating the activities of "natural monopolies".

Funding of science, educational and research programs by the state.

At the same time, such a toolkit of industrial policy has a number of drawbacks that should be taken into account when using it. These disadvantages traditionally include the possibility of preserving monopolistic dominance in the market of a number of industrial companies, the possibility of corruption affecting the distribution of financial support from the state, as well as the possibility of a deficit in the market within certain product groups. In its turn, the limited possibilities of the budget in financing scientific research are combined with greater efficiency of research conducted not by the state, but financed by large industrial companies themselves, which have control rights and have a clear idea of future commercialization of the produced scientific content. The disadvantage of funding from the state can also be considered as a political tie in the issue of realized scientific projects (at the stage of their selection). Turning to the need to use such an instrument as support of certain industrial sectors by the state (which becomes necessary in the conditions of sanctions pressure and the need to form a number of new industries), it is also necessary to note a number of existing drawbacks.

These disadvantages include insufficient interest of the state and specific representatives of the authorities who make the final decision on financing issues (lack of personal incentives to identify the most promising areas of development of industry and individual industrial enterprises), which reduces the effectiveness of this tool. In this case it is also worth taking into ac-

count possible corruption as a factor of inefficient distribution of financial resources and various benefits within the framework of support for industrial development.

## Results

The elimination of the identified negative consequences of the formation and implementation of industrial policy within the framework of the methods and tools used is possible only with the preliminary formation of a system of statistical indicators and indicators to assess the effectiveness of industrial policy.

The effectiveness of industrial policy implementation also requires the creation of such a system or the selection of a number of basic indicators that are most capable of demonstrating the failure or effectiveness of the selected toolkit within the framework of compliance of the obtained result with the set goals and objectives.

At present, there are many different variants of performance measurement systems, which differ in structure and the set of indicators used. These efficiency assessment systems are actively developing and being developed both in the national economy and within the framework of international research. At the same time, by indicators we define a quantitative and qualitative characteristic of the processes of industrial development in the national economy. At the same time, it should be understood that the chosen system of indicators itself is determined by the objective characteristics of the analyzed object and is adjusted depending on the goal set.

When determining the set of indicators it is also necessary to take into account two main points:

Indicators used for performance assessment should be consistent with official statistics used in the country and region to be able to calculate and assess their dynamics.

The proposed indicators should not depend on the dimensional characteristics of the analyzed territories.

When analyzing the implementation of industrial policy and assessing its effectiveness, in our opinion, it is initially necessary to consider a system of indicators based on three basic groups:

Indicators of macroeconomic nature.

Indicators of territory development.

Indicators of industrial competitiveness.

When using the proposed system to assess the implementation of industrial policy, it should be taken into account that one of the basic factors of the territory's development and stability of economic and industrial development within the national or regional economy should be considered as the general parameters of macroeconomic development and stable parameters of competitive development and position of the territory's industry in the analyzed period of time. In fact, it can be argued that the indicators of competitiveness of the territory both within the national economy and in the international market are a significant and absolutely necessary indicator of efficiency assessment. It is the competitiveness indicators and their dynamics that make it possible to assess what has already been realized and what is planned to be done within the framework of industrial development of the territory without regard to the influence of positive or negative macroeconomic environment in general in a particular period of time.

At the same time, when considering this proposed system, it is also necessary, in our opinion, to list those key factors that can ensure the growth of efficiency of industrial policy implementation as a whole. These include:

The existing scientific potential.

The existing socio-economic potential of the territory.

Existing human resources potential.

It is this set of factors that has a primary impact on the sustainability of the territorial economy development. In turn, it forms the attractiveness of the territory for modernization and reconstruction of existing industries, and this also contributes to the solution of a number of social problems within the framework of the problem of providing employment growth and income growth.

When assessing the effectiveness of industrial policy implementation, it is also impossible, in our opinion, to do without the traditional indicator of efficiency assessment, namely the value of Gross Regional Product (GRP) or GRP per capita (it is this indicator that allows us to assess the effectiveness of the ongoing changes in the economic and industrial development of the territory). Undoubtedly, a number of additional indicators are also needed to assess changes in the social sphere, in the system of environmental protection (which is an important indicator for the intensification of industrial development), in changes in the welfare of the population, in the health care system and in the level of employment.

Such indicators (in addition to Gross Domestic Product and Gross Regional Product) as investment in fixed capital, average per capita income and expenditures, average accrued wages and salaries and a number of other indicators [29] can also be analyzed for initial consideration of statistical material. In fact, they can already serve as a basis for initial consideration of the current situation and for some ranking of certain territories by the efficiency of industrial, economic and social development.

Analyzing our methodology for assessing the implementation of industrial policy, it should also be said that, in our opinion, within the framework of this methodology, great attention should be paid to such indicators as:

Labor productivity.

Employment dynamics.

The level of wages.

The share of the territory's exports of a certain commodity group in the national exports.

Labor productivity is a basic indicator of the effectiveness of public policy based on the premise that productivity growth increases competitiveness, which in turn contributes to higher GRP growth rates. GRP growth increases employment [30]. In general, according to this group of indicators, we can say that the inflow of investment and innovation in any region is actually determined by the potential opportunities of the territory, as well as the prospects for their growth. The more opportunities for profit-making in a region, the greater the investment flow in the development of existing and in the creation of new industrial enterprises. And this can be attributed to both large and small investors in the Russian economy.

Thus, based on the analysis we can say that if the direct indicators of the effectiveness of industrial policy implementation can be considered economic indicators (GDP and GRP, labor productivity, intensity of investment flow and investment in fixed capital), then the indirect indicators of effectiveness (but no less important) can be considered social indicators and indicators of population welfare growth (income and wage levels, employment, mobility of the population). At the same time, all indicators (both economic and social) are based on the potential of the territory for development (including human resources and management potential, as well as scientific, educational potential and existing opportunities of the territory for commercialization of the produced scientific content).

It is also worth noting the interconnectedness of the existing indicators in this system. For example, the level of efficiency (assessed through GDP, GRP, productivity and average per capita income) can directly affect the intensification of the investment process, and the increase in investment, in turn, creates potential opportunities for growth in the efficiency of industrial development in future periods of time. At the same time, within the framework of investment flow we are interested in investments in the industrial sector of the economic system of the territory. These investments, in turn, should be divided into:

Investments in the region's industry at the expense of local resources.

Investments in the development of the territory's industry at the expense of external sources.

At the same time, when analyzing external investments, it is necessary to track changes in the following groups:

Investment flow within the framework of the formation of new industrial enterprises in the new sectors of the territory's economy being created, which is interrelated with the solution of social issues of the territory's development, with the creation of new jobs;

Investments in existing enterprises, which affects the efficiency of functioning of these enterprises.

The main problems of the existing investment processes realized in the national economy, in our opinion, currently have common reasons related to the general economic and political situation (increased sanctions pressure, lack of access to new Western technologies and investment flows). All this is superimposed on the problems of high cost of credit money, high taxes on income and profit, limited cash resources of the state and the existing instability in anticipation of the development of the future economic situation. All this forms negative expectations of investors, and these expectations of investors and economic players actually form the future economic situation itself. At the same time, the opportunities for intensification of the investment process still remain and can increase the possibilities of potential growth in the efficiency of industrial development.

In our opinion, the next element in the basic approach to assessing the implementation of industrial policy should be a group of indicators of innovation and environmental orientation.

In terms of the direction of innovation, these are:

Number of organizations implementing innovative research.

The number of innovatively active industrial enterprises.

The value of internal expenditures on innovative research.

In the direction of ecology and environmental protection are such indicators as:

Volumes and facts of polluting emissions into the atmosphere (pollutants).

Pollution of water resources.

Water recycling.

Reforestation.

The importance of environmental parameters and environmental protection parameters is determined by the fact that any territory develops in interaction with the environment. The natural environment being involved in production processes itself becomes a factor of territorial development, which requires mandatory consideration of the environmental element in the analysis of any reproductive territorial system.

### Discussion

When analyzing the types of industrial policy, it should be noted that the peculiarity of industrial policy should be considered that this policy should be implemented in the long term,

which requires not only short-term decisions, but also the development of scientific potential in selected areas with the possibility of ensuring the capture of certain niches in the world market. This will ensure in turn the possibility of forming the innovation process for a long period of time, the possibility of forming scientific schools and ensuring their continuity. Thus, the basis of effective industrial policy at the federal and regional levels is always the development of science and research in the field of production development.

Considering the possibilities of innovative industrial policy in this context it should be noted that more and more organizations in the Russian economic system are aware of the opportunities offered by the innovative potential of the organization within the framework of increasing the competitiveness of the organization. According to the data of Table 1 we can see some positive changes in this direction in recent years. Nevertheless, these scientific researches, which form potential opportunities for the growth of economic efficiency, as can be seen from the data of Table 2, are implemented mainly at the expense of the federal budget, that is, despite the importance of this tool to improve the efficiency of industrial development, the organizations themselves are extremely reluctant to spend their own funds for these purposes.

**Table 1:** Key indicators of innovation activity.

	2019	2020	2021
Level of innovation activity of organizations, percent	9,1	10,8	11,9
The share of organizations that implemented technological innovations in the total number of of surveyed organizations, percent	21,6	23,0	23,0
Volume of innovative goods, works, services, billion rubles	4 863,4	5 189,0	6 003,3
The share of innovative goods, works, services in the total volume of shipped goods, works, services in the total volume of shipped goods, performed works, services, percent	5,3	5,7	5,0
Expenditures on innovative activities of organizations, billion rubles	1 954,1	2 134,0	2 379,7
Specific weight of expenditures on innovative activity of organizations, in the total volume of shipped of goods shipped, work performed, services, percent	2,1	2,3	2,0
The share of innovative goods, works, services in the total volume of shipped goods, works, services in the total volume of shipped goods, performed works, services of small enterprises1), percent	2,4	–	2,8
Expenditures on innovation activity of small enterprises of small enterprises1), billion rubles	27,3	–	54,4

**Compiled from:** Russian Statistical Yearbook 2022 (in current prices). URL: <http://www.gks.ru>.

The increase in federal budget expenditures on research in the last few years actually corresponds to the increase in expenditures of scientific organizations themselves on this research. At the same time, the expenditure of funds of organizations of the business sector on research has grown very insignificantly (Table 2).

**Table 2:** Internal expenditures on research and development by source of funding (billions of rubles).

	2000	2010	2019	2020	2021
Total	76,7	523,4	1 134,8	1 174,5	1 301,5
Including by sources financing:					
Budget funds	41,2	360,3	730,8	768,8	840,4
Own funds of scientific organizations funds of scientific,	6,9	47,4	193,4	205,5	242,9
Scientific, technical and innovation activity funds	...	...	11,7	14,4	13,0
Funds of organizations entrepreneurial sector	14,3	85,9	169,1	161,9	176,5
Funds of educational organizations higher education	0,1	0,5	1,5	1,5	2,0
Funds of private non-profit organizations organizations	0,03	0,6	1,1	1,7	1,7
Funds from foreign sources	9,1	18,6	27,2	20,7	25,1

**Compiled from:** Russian Statistical Yearbook 2022 (in current prices). URL: <http://www.gks.ru>.

Finally, if we turn to the long-term period of time in the formation of the innovation potential of the national economy as a whole, when considering the expenditures on fundamental and applied research, we can note the priority of investment in applied research. The importance of fundamental research (with extremely distant prospects of content commercialization) is falling, despite the significance of these researches in preserving the priorities of national science development, in preserving the existing scientific schools and prospects for advanced development in future periods of time.

### Conclusion

Summarizing the above, we can conclude that in determining the role of each respective level of government and business structures in the implementation of industrial policy it is necessary to take into account the three possible levels of industrial policy implementation (microeconomic, meso-economic, macroeconomic), as well as two levels of government: federal authorities, municipal authorities.

The federal level of government is able to influence the implementation of industrial policy at each of the three levels of policy implementation. Federal authorities are able to use macroeconomic tools, can promote institutional transformation at the meso level, but can also work at the micro level (directing attention and industrial policy tools to individual enterprises). In fact, it could be said that each higher level incorporates the capabilities of all previous levels. Nevertheless, this would simplify the model of formation and implementation of industrial policy because, on the one hand, actions and decisions at the level of an individual enterprise may require the participation not only of business structures, but also of federal ministries and agencies, and sectoral priorities of industrial development cannot be adopted only at the level of federal or municipal authorities, but also require mandatory coordination with business structures.

In our opinion, a matrix system of formation and implementation of industrial policy is more suitable here, when the authorities work within a strict hierarchical system of subordination, and business structures allow to form a matrix in the management of industrial policy, creating centers of influence and decision-making at certain intervals of time and within the framework of relevant industries or groups of industries. At the same time, these business structures influencing the process of industrial policy implementation should change when the goal is achieved. At the same time, when developing and implementing the regional industrial policy it is necessary to take into account the general conditions and prerequisites for its formation at the regional and federal levels. The analysis of general economic conditions is necessary both in the framework of industrial policy implementation by economic methods (including macroeconomic levers) and administrative methods. Considering administrative methods as direct and economic methods as indirect, it is necessary to realize that they actually complement each other, since each group of methods can use its own group of tools. In any case, this toolkit will be superimposed on the financial, innovative and organizational capabilities of the territory, which in fact will determine the final effectiveness of the decisions taken.

Thus, on the basis of the conducted research, it can be argued that the types of industrial policy have been evolutionarily formed in the relationship with the basic principles of industrial policy implementation and the main directions of industrial

development. At the same time, the types of industrial policy were transformed depending on the goals set at the level of a separate region or the entire national economic system (in the conditions of industrial policy implementation at the three main levels in interaction with federal and regional authorities). However, almost all the possibilities of industrial development and the effectiveness of industrial policy tools are interrelated with the effectiveness of innovative development of the economy and society as a whole, with the possibilities of realization of fundamental and applied scientific research in the national economic system.

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