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**INDUSTRIAL POLICY AS A TOOL OF RESTRUCTURING THE
RUSSIAN ECONOMY**

N.M. Baranova (a)*, N.A. Shevtsova (b), E.G. Dmitrieva (c)

*Corresponding author

(a) Peoples' Friendship University of Russia (RUDN), 6, Miklukho-Maklaya Str., 117198 Moscow, Russia,
baranova_nm@pfur.ru,

(b) Peoples' Friendship University of Russia (RUDN), 6, Miklukho-Maklaya Str., 117198 Moscow, Russia,
n_shevtsova@list.ru,

(c) Peoples' Friendship University of Russia (RUDN), 6, Miklukho-Maklaya Str., 117198 Moscow, Russia,
elena@4433.ru,

Abstract

A broad interpretation of Industrial Policy as a tool for restructuring the economy is proposed. This policy should contain other regulatory functions of the state: technology, investment and foreign economic activity. The parameters of the industries having the potential for competitive economics growth and export prospects are specified. Attention is paid to the question of the extent to which the openness of the Russian economy contributes to achieving technological modernization of the national economy. Russia should integrate more actively into the global value chains with newly created goods and services. Import substitution should not be the dominant constituent of the Industrial Policy. Another danger lies in "second hand" technologies. Public funding should be aimed at creating teamwork between private investors and state structures rather than substitution. When investment projects are dominated by credit schemes secured by assets, then there is a threat of redistribution of property. If the investor is insolvent due to reasons of force majeure, it is necessary to use development institutions funds or the "money creation". The hypothesis was put forward the promotion to the level of «Industry 4.0» will be accompanied by «creative destruction» a lot of global value chains, that creates "opportunities" for the industrial complex of Russia.

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1. Introduction

The current state of Russian industrial production, despite the progress of digital technology, cannot serve as a source of sustainable development. The economy being formed is that of service activities rather than the economy of knowledge and innovation. Meanwhile, the leading countries, including those with successfully developing markets, are implementing programs of transition to a new technological level. Russia's "new economics reality," associated with the global crisis, can be summarized by the Latin saying "periculum in mora" ("danger in economics delay"). If we continue to delay economic development, we may fall behind successful economies in the near future in a way that may be catastrophic.

2. Problem Statement

Nowadays, the Industrial Policy choice, its composition and instruments, its correlation with the other types of state regulation are being discussed. Does Industrial Policy represent an efficient mechanism for structural adjustment only in developing economies? Can Industrial Policy be considered as a means of correcting the mistakes of market coordination associated with the emergence of new industries and agglomerations? Maybe those researchers are right who deny Industrial Policy because they think it distorts competition and market incentives and suggest improving "open access institutions" as an alternative.

It is natural to aspire for an economy having equal conditions for all industries and perfect market mechanisms, offering business opportunities to choose and implement investment projects, and having no need to intervene management. In real life economy, everything is not so unambiguous, its parameters are variable. First of all, this applies to transitive economies, where it is difficult to ensure successful catch-up development without government regulation procedures. The Nobel laureate North (North, Wallis, Webb, & Weingast, 2012, p.13) writes, "... development institutions' needs in these regions are qualitatively different from those in developed countries". Practice shows that the correlation between the economic growth and development institutions' quality (property rights strengthening, business management and minimal administration) is non-linear and contradictory. On the one hand, economic growth contributes to institutional progress: the Russian business conditions have significantly improved in the 2000s. On the other hand, the Head of the Centre for Strategic Research Alexei Kudrin, who proposes to focus on improving the development institutions, recognizes that such management may allow returning to high growth rates in 4-5 years. However, the time factor matters.

Both foreign and Russian experts warn against an "excessive focus" on formal institutions adjustment. They point out that these attempts "... were based on incomplete understanding of the tasks" (Hedlund, 2015, p. 80), that "...the procedural path should be different: first, return to high growth rates, then – implement active institutional and structural reforms" (Ivanter, Porfirev, & Shirov, 2014, p. 59). They suggest using the experience of countries that have successfully implemented a technological breakthrough when "their central banks became ... development banks emitting the necessary amount of money to implement investment projects and programs" (Glazyev, 2015, p. 49). In other words, how to achieve economic growth above the world average in the coming years. Summing up various views and opinions, those who do not believe it is possible to solve the structural problems of the Russian economy using development institutions increasingly dominate in the expert community (and among officials). The arguments include modest results of the market reforms (especially against the background of China's

success). The course and results of the Russian reforms have become an anthology for critics of the Washington Consensus (Polterovich, 2014; Stiglitz, 2000; Matyushok, 2002). This “guidance” for developing countries postulates non-interference of the state into the economy. However, if there is a need to optimize the management processes, it is necessary to decide whether to increase or reduce the role of the state.

3. Research Questions

3.1. Industrial Policy in the Russian Federation

Industrial Policy is largely determined by the level of the officials’ competence (Rodrick, 2010). Out of all the industries, innovation and secondary processing provide the most sustainable development. After the 1998 default, the growth in these sectors reached 10%, but by 2012 the rate dropped sharply, and stagnation has been observed since then. According to the Federal State Statistics Service, the value-added index in manufacture was 101.1% in 2016, which is below the corresponding index in energy (102.6%) and agriculture (103.6%). The critical value of the R&D results has prompted the state to assume functions of a centre for strategic planning and diffusion of new technologies. The corresponding law No 171-FZ was adopted in June 2014 and was followed by the law No 88-FZ “On Industrial Policy in the Russian Federation” six months later. Investment inflow into the Russian's high-tech sector depends on an expectation of an increase in oil prices or on the decision of foreign investors.

It is believed that the state is an inefficient owner in matters of industrial policy. However, examples of states solving the tasks of catching up development with varying degrees of success refute this thesis. After 2008, a prospect of a dramatic reduction in surplus in trade with the US and the EU loomed ahead of China and India; this trade relationship has been providing the Asian colossus with an outstripping GDP growth for over a decade. India decided to rely on local projects involving local businesses and foreign investors, while Beijing went for a state program of transport modernization. Its financing cost China 7% of its GDP. “These large infrastructure investments...have become an important competitiveness factor” (Matyushok & Krasavina, 2016, p. 6). The program is coordinated by the state China Railway Rolling Stock Corporation (CRRC), which is currently narrowing its global competitors Siemens, Alstom, Kawasaki and General Electric. After the country’s exports shrunk by 6.6% in 2015, foreign contracts in the railway industry brought 10.7 USD billion to PR China’s budget. Another example is Lenovo company, where the state (PR China) owns 41% of the shares. The control state package does not stand in the way of its corporate status and expansion outwards. Another idea is, “success of catching-up development is promoted by a high level of political democracy”. “Irremovable power allows implementing long-term programs, which is hardly feasible in case of frequent changes of government” (Polterovich, 2014, p. 194), like in India. “Even in conditions of ... competitive democracy, the mechanisms of incorrect use of scientific data act regularly” (Atkinson, 2013, p.756).

It is remarkable that the reincarnation of Industrial Policy is occurring in developed economies (it was influenced by China). The global crisis has exposed weaknesses in the industrial structure of the US, which cannot compete against China. The US recognize the trade balance deficit with China as a threat to their technological leadership. Leading US multinationals are taking production capacities back home. However, the “industrial policy” term is perceived as a non-economic coercion (which is fair) and as a step

towards administrative and distributive economy (which is incorrect) (North et al., 2012, p. 6). Therefore, the “Laissez-faire” policy criticized by Erhard (1991, p. 226) is called “Industrial Policy”. It is contrasted to development institutions, which imply that the state supports certain sectors and industries.

In the mid-50’s, Robert Solow proved that science and technology make up to three-quarters of the US economic growth rate. The discovery gave rise to research on the impacts of innovation on the country’s economic growth. The most famous was Schumpeter’s concept of “creative destruction of the market”, that exert a destructive but “creative” impact on free trade principles.

3.2. Industrial Policy

In the era of the “fourth industrial revolution” technological innovations are crucial to economic growth (Schwab, 2015). The main idea of the industrial policy of the leading powers focuses on retaining or restoring technological independence. A failure at this stage may result in a loss of sovereignty, as V. Putin repeatedly warned.

The industrial policy must take into account the industrial specializations. Russia’ industrial specializations are mainly raw materials or sectors manufacturing products with a small added value. What we would like to see is a self-sufficient high-tech sector producing competitive goods and services. The Industrial Policy could correct the “market failures” regarding floating the capital into priority sectors (in terms of state interests) and rebuilding the flawed economics (in terms of the country’s future). The reasons behind the diversification of Russia’s economy are a lack of technological incentives for “leaders of gas and oil industry”. The average index of research intensity for USA industries is 4.5 points, and it is only 0.5 point for oil industry (Ivanova, 2016, p. 6). Canada and Norway when inviting foreign investors to participate in oil production projects, form an order for advanced technologies. In several decades, Russia’ neighbours have solved the problem of deep-sea drilling and obtained mechanical engineering, which is in demand on the external market. Russia’s leaders of gas and oil industry do not have a record of similar achievements. Apparently, there is an objective reason for that, too: overall management deprofessionalisation in infrastructure and strategic industries, which took place after the process of privatization.

Measures of administrative and fiscal impact and rise in the oil prices are not enough for the technological modernization. Large-scale access to foreign markets with a competitive product requires production capacities relying on advanced technology. The question is where to get them: outside the country or within, using its our resources.

According to the Institute of Economic Forecasting of the Russian Academy of Sciences, “the renewal of key assets in the Russian economy can be provided by domestic production by only 40%” (Kvashnina & Obolensky, 2016, p. 225). Hence, the conclusion that even today the success depends on external sources. Asian countries cannot supply the latest technology, since they themselves depend on developed countries. They state, that the unsuccessful reform by the Russian Academy of Sciences (RAS) makes “internal generation of technology ... practically impossible” (Minakir, 2014, p. 184).

The Russian Federation has never received advanced foreign the scientific and technical technologies, and it will never get. The occasionally imposed sanctions regime should not deceive anyone: the ban on the transfer of competitive development is permanent.

There is a point in studying the experience of the PR China. Beijing's industrial policy is based on rigid mechanisms of protection from the competition and the development of high-technologies. Western partners were convinced that China could not create its own high-tech technologies, but only borrow foreign know-how. "When assessing a country's global influence, its technological level is important rather than its economy size; China's technological progress is feasible, but its leadership isn't" (Kroeber, 2016, p.16). Here's a summary by American sinologist Arthur Kroeber: "The 21st century China cannot reincarnate into Germany on the eve of WWI or the Soviet Union during the Cold War era" (Portyakov, 2017, p.119).

The attitudes toward Russia are more cautious. Five years before the "war of sanctions" (2009), the transnational corporation General Motors acting under Obama administration's constraint refused to sell the Opel's car making division to the consortium of Sber (Russia) and Magna (Canada). The USA did not forget how the total stateization of the economy did not prevent (and maybe helped) Russia from achieving technological modernization in the middle of the last century. Europe remembers that, too. The annual "market global competitiveness" (GCI) rating by WEF Davos PR China ranks 28rd, and Russia ranks 43rd (Schwab, 2016). However, the experts of Klaus Schwab's Forum assess the Russian economy much higher. This shows the high prestige of the Russian science, which has been preserved since the Soviet times.

Another channel for the transfer of high technology to China is the "intra-ethnic" cooperation between the Chinese citizens and the Chinese diaspora from foreign countries. According to the US National Science Foundation experts (Science and Engineering Indicators, 2016), the technological ties between the US and China are closer today than those with their English-speaking relatives – England, Canada, Australia, and New Zealand. Russia is not a competitor to China in it.

Russia has its own competitive advantage: fundamental schools, sectoral science, and technical universities of world level. China lacks these competencies. China spends much more on R&D than Russia and catches up with the United States. However, China is forced to "save" its spending on basic sciences, yielding not only the US, but also to Russia (China - 4.5%; Russia - 15%; US - 17.5%) (OECD, 2017).

US accuses the Chinese partners of sophisticated and purposeful theft of patented technologies through cyber-penetrations on an unprecedented scale" (Gertz, 2013). Obama's national security adviser made this statement in March 2013.

The recipe sounds simple, but its implementation is complicated by the negative dynamics of the human capital caused by the de-industrialization of the country and the outflow of a large number of talented specialists abroad (Baranova & Sorokin, 2017). One of the solutions is to direct some of the dividends to fight against brain drain. These issues are regulated at the corporate level but are dictated by the industrial policy of the state.

3.3. Foreign economic objectives of industrial policy

The "New Growth Model – New Social Policy" Strategy-2020 states (Strategy 2020: A new growth model - a new social policy, 2012) that "the opportunities for the participation of Russian companies in global value chains, which can weaken Russia's raw materials profile, have not yet been involved".

We have to answer the question: should we buy ready-made high technologies and save on R&D when a sudden break in contractual relations with Western countries is very likely?

As far as “global value chains” are concerned, in these network structures, the greatest return on investment is obtained by the companies that control access to the market or that are engaged in R&D. As a rule, these are businesses of technologically developed countries. Exceptions are rare, but they cause irritation fits in the West. In December 2012 “T-Platform”, the Russian supercomputers producer, won a tender from their American competitors Dell and Hewlett Packard. Three months later (March 2013) it was put on the “List of Organizations and Persons Operating Against National Security and Foreign Policy Interests of the United States”. Another story of this kind is persecution of Kaspersky Lab.

Dishonest competition is not the only problem that Russian companies face when participating in the international division of labor. Global value chains links with low added value are usually located in developing economies. The introduction of “second-hand” technologies usually results in closing down R&D. Russian high-tech manufactures segregate, they are poorly funded, and the whole branches get destructed. Civil aircraft construction is one example. In the 1980s, every second aircraft was made in the USSR. Despite the ups and downs of the 1990s, Russia has remained a great aviation power, and TNC Boeing, an integrator of an aircraft global value chains, established its design center in Moscow, the largest outside the United States (a second unit is about to open).

Besides, Boeing was among those who initiated the creation of the regional aircraft family “Sukhoi Superjet – 100”. However, this segment of the market is shared by the competing companies, Bombardier (Canada), ARJ-21 (China), MRJ (Japan), and Embraer (Brazil), and “...high concentration of manufacturers in a limited economic space causes a destructive aggravation of competition ... while any attempts to build up the offer only worsen the trading conditions” (Dementiev and Ustyuzhanina, 2016, p. 26). Another story involves Antonov, which is probably the only aircraft construction company capable to destroy the oligopoly of Boing-787 and Airbus-350 in the market of wide-bodied airbuses. After the Ukrainian crisis occurred, Russian subcontractors lost their cooperative ties. Now, Russia will be building a long-range aircraft CR 929 in cooperation with China (where many leading Antonov experts have moved).

The crisis and aggravation of trade contradictions between the leading powers have given life to new concepts somehow related to foreign economic activities. The concept of “The New Structural Economics” put forward by Justin Yifu Lin, an influential Chinese economist and former World Bank leading expert claims that an effective Industrial Policy can be implemented in a country improving the comparative advantage which is competitive in global markets (Lin, 2012).

In the international division of labor, Russian businesses mainly participate as suppliers of hydrocarbons and simple commodities, rolled metal, mineral fertilizers and “round timber”. According to UN Database from 2002 to 2011, Russia’s share revenues from trade of goods and services that the country did not previously specialize is one of the lowest (6% against 38% for the US and 22% for China). Today, this indicator has gone up at the expense of agricultural products, which are “simple goods,” although renewable (Gnidchenko, 2014). The global crisis once again reaffirmed the vulnerability of the raw export model (except for some unique proposals), while knowledge-intensive offer the greatest chances to increase export earnings.

It is another matter if “revealed comparative advantage” means improving the characteristics of traditional exports rather than diversification of export supplies. If so, we must think three times before proceeding to the technological modernization. What if we fail and things get stuck at the stage of imports

substitution. Back in 1776, Adam Smith warned the rebellious colonists from the “newborn” States about the dangers of protectionism. He pointed out that the country having a manufacturing industry takes the upper hand.

Preservation of the status quo in the world trade structure is in the interests of the Chinese economy. However, the Chinese themselves have achieved a dominant position due to the constant complication of their exports: from clothing, shoes, toys to household appliances, and then to smartphones and computers. The share of exports to the GDP of the PR China reached 35% in the 2000s, and only today, as domestic consumption has grown, it has fallen to 25%. Uzbekistan also began to develop car making, which was a new industry to it, provided 100% localization. This Central Asian country has achieved steady growth rates, which goes in stark contrast to its neighbors, who continue to exploit traditional “comparative advantages”: electric power in highland Tajikistan and Turkmen gas.

The modern theory of international trade associates determinants of export specializations performance with “dynamic” advantages and the process of their complication is referred to as “learning by doing.” The Russian economy needs a comfortable environment contributing to saturation of the industrial complex with knowledge-intensive industries. Meanwhile, the chance to gain a foothold in foreign markets will depend on the offer price and on how long it will take to develop a prototype into a real product.

The uncertainty persistent in the world trade raises the importance of import substitution, which has become an important constituent of the Russian Industrial Policy. Most measures taken by the government in this regard are related to the reaction to the long and inadequate openness of the domestic market. However, the long investment cycle, associated with the reorganization of the established industries and with the creation of new industries, does not allow us to track changes in the external environment in a prompt manner. Therefore, imports substitution will make even the most technologically advanced company uncompetitive unless they are compensated for by stimulating exports.

Even if Russian companies participate in the “global value chains” in their capacity as integrator, it does not guarantee against sanctions disasters. The competitors are creating obstacles for domestic developers of digital platforms and, thus, they are setting new goals for Industrial Policy: what and how must be changed in foreign economic priorities. The transition of the leading economies to the Industry 4.0 level will be accompanied by the restructuring of many economies, which opens up great opportunities for the Russian economy. These issues should be reflected in the foreign economic edition of the Industrial Policy.

3.4. Investment support for industrial policy

This topic is divided into two areas, which are not strongly correlated: where to find the sources of investment; where it is preferable to invest.

Let us start with the latter, which refers to the investment application framework. Our era is associated with “brainfacturing” – “production using human intellect,” which is gradually replacing “manufacturing”. There is a growing number of small businesses, which have traditionally been seen as a favourable environment for innovators’ activities. However, if management skills are not supported by knowledge of modern technologies, small businesses are doomed to trading and intermediary activities.

Many ideas are born in start-ups, which do have growth potential but have little chance to hold the competitive positions won. Therefore, the Industrial Policy priority task is creating conditions that would help innovators to expand the scope of activities and raise their status.

The Russian Federation is the largest owner of industrial assets. Under the present circumstances, the Industrial Policy focus should be shifted to achieving production competitiveness. In the late 1980s, China tried to transform its former industrial giants into centres for attraction and development of small innovative businesses. At those times, many “red” governments did not risk investing in R&D but chose to borrow ready-made technologies, and the state program for generating original designs was stalled.

Considering the “Industry 4.0” technical ideas (robotics, neuro- and digital technologies, genetic engineering), the best prospects for industrial growth are found in medium-sized businesses, free from numerous corporate “bonds” and a large number of bureaucratic superstructures. In particular, relying on medium-sized industrial enterprises will allow raising the budgetary security of the Russian regions, provided the infrastructure’s offer (which is one of the Industrial Policy objectives) does not lag behind the investors’ demand for production sites. Russia’s transition to an innovative economy requires large investments. The optimal investment resources would be internal savings based on the entrepreneurs’ funds. It depends on how attractive the schemes of public-private partnership are. It is logical to consider “the amount of private funds attracted per each ruble of state support” (Osmakov & Kalinin, 2017, p.48) as a criterion for the success of the Industrial Policy investment aspect. If the private investor is insolvent due to force majeure reasons, it is necessary to back up the “market failures” with development institutions’ funds rather than commercial banks’ resources. At present, investment partnerships are dominated by credit schemes secured by assets, and this institution is perceived as a risk factor associated with a threat of property redistribution. Today, Russian business is more interested in bargain and intermediary transactions than innovative projects.

Budget spending should be seen as a guarantor of financial sufficiency and used in case of lack of private investment. Fiscal methods are not always efficient. “The Russian government spending cannot be considered stimulating increase of the innovative activity of the private sector” (Balashova, 2015, p.68).

The state accumulates most of the rental income, but industrial structures financing is limited due to problems with the revenue side of the budget and the gradual reduction of reserve funds. Therefore, a number of economists insist on the “money creation”, which will become a reliable financing source for the modern Industrial Policy. The banks authorized to issue loans should be guided by the interests of modernization and regulate the interest rates. This should result in domestic market saturation with “money creation” from internal sources. This alleviates the severity of the problem associated with long term credits from abroad, which have been banned for several years. The opponents put forth the following theses:

- The money creation lowers the value of the credit interest rate, meant to “peel apart” unprofitable projects;
- This may result in the appearance of a block of privileged companies, which will lobby their participation in the subsidy program;
- The flow of preferential funds directed at paying salaries, services from counterparties, and purchase of equipment from subcontractors cannot be controlled, so the money supply will grow in any case;

– Even provided all these loans are spent in strict accordance with the investment task, the money creation will enter the foreign exchange market, cause an upsurge in inflation.

The opponents are close to a compromise that is based on four assumptions: issue loans should remain an exclusive tool, be elaborated, target-focused, and time-limited.

Let us supplement this list with the following considerations. At the moment, “there is no possibility for significant acceleration of economic growth by means of industrial capacities” (Kudrin, Goryunov, & Trunin, 2017, p.16). The industrial recovery witnessed after the 1998 default was due to the capacities created in the 1980s. Nowadays, with unused capacities at hand (26% of production only in machines and equipment), there is no unsatisfied demand in the domestic commodity market. Hence two conclusions. First, this story clearly outlines the industrial policy. Provided the domestic manufacturers had more competence, many of them would retain their competitiveness despite the import flow, which came down on them in the 2000s. Secondly, the problem is so large that it cannot be solved with point measures. Therefore, the money creation (which has not been decided upon yet) needs to be focused on research and production structures whose sphere of interests includes technological modernization and perspective introduction of new goods into foreign markets.

4. Purpose of the Study

The article is based on the thesis that the industrial policy is the main function of sectoral diversification. The industrial policy sets forward the main sectors of economics that could be the boost of competitiveness. The authors discuss the issues of correlation between the industrial policy and other types of state regulation and make proposals to enhance the effectiveness of industrial policy.

5. Research Methods

The data used originate from Rosstat, the World Economic Forum in Davos, and other sources. A comparative analysis, expert evaluation methods, and other comparative methods were applied. According to the authors, the possibilities of model studies, which are capable to provide long-term forecasts, are limited in the Russian realities. Structural DSGE models are vulnerable due to frequent currency and trade shocks. Non-structural models are based on the processing of a minimum number of deviations from the market equilibrium, which is acceptable for developed economies. Further diversification of the Russian economy and perfection of development institutions will help to increase the effectiveness of model calculations.

6. Findings

The study showed that Industrial Policy strongly depends on the experience of public management, may have high corruption risks and violate the principles of a competitive market. As an alternative solution, the opponents suggest «open-access» institutions as social mechanisms. But the institutions of the transition economies are imperfect and it is difficult to ensure the success of catching up development without government regulation. It is emphasized that Russia should integrate into the international division of labour by creating new high-tech manufacturing. In this regard, the issue of "money creation" as a source

of financing the high-tech sector goods and services was raised. On the contrary, the practice of "borrowing" knowledge and technology can lead to preservation of scientific and technological backwardness.

7. Conclusion

Overall Russian industrial development and outstripping growth of knowledge-intensive sectors are ensured by a competent industrial policy. The state, in addition to solving the issues of investment supply, needs to stimulate scientific and technological progress and help the business to occupy stable market positions. It is important to elaborate the rules and mechanisms to implement the Industrial Policy on the basis of mutual understanding between the decision makers, representatives of strategically oriented businesses and independent experts. Public discussions on alternative projects and programs must be held. A government relying on partial scientific findings does not always improve the state policy quality. There should be more demand for research capacities of small research teams from universities, industry and academic institutions, which are interested both in developing their own competencies and in improving the scientific and educational status of their institutions.

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