

Import substitution in developing the Defense Industry of Russia as a new economic industrialization tool

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Abstract—The article identifies and analyzes external factors affecting the activating process of import substitution in Russia as a new economic industrialization tool in Russia, examines and argues in favor of the need to make an overview of the program of integrated development of the Russian economy and formulate ways to accomplish the concept of import substitution of industrialization having developed, mainly in key sectors of economy and the defense industry of Russia. The authors have studied laws and regulations performing an import substitution program of import substitution and industrialization in the defense industry of Russia. The article highlights the obstacles that deter to implement the program of import substitution in the production activities of companies of the Russian defense industry in new conditions of industrial development in the contemporary context. The authors clear up the nature of cost-innovation strategy, the practicality of stepping-up community of viable solutions from related areas of scientific expertise, which allow minimizing the time and resources spent on the production of modern and competitive models of weapons and military equipment. The authors determine the significance of the successful implementation plan of import substitution in the Russian defense industry, which is the main tool for its rapid development.

Keywords—*import substitution; the Defense industry; process of import substitution, new industrialization.*

I. INTRODUCTION

Between 2000-2014 Russia increased the amount of delivery of foreign product supplies irrationally when gaining regular income of the sale of domestic raw materials in global operation. It increased on average 8.4 times more in all sectors of the Russian economy over that period [1].

It is known that the share of foreign make accessory parts in the construction of end products tended to mount constantly. There was mainly a direct correlation between the supplies of Ukrainian products in the sectors of the Russian defense industry (DI), which immediately resulted in a decreasing coefficient of structural independence of domestic machinery manufacturing products. It can therefore be concluded that sanction restrictions on the purchase of imported equipment and components imposed by the US, EU countries and their partners in 2014, threatened the state security as a whole [2].

II. PROBLEM STATEMENT

As things stand at the moment, the Government of the Russian Federation raised a natural possibility of the necessary and time-urgent re-examination of the program for the development of the Russian economy to work out and embody the ideas of import substitution to new industrialization in Russia through 2020.

A number of programs for substitution of imported equipment and their component parts for domestic counterpart manufacture form the basis to these conceptions. It appears to be the main aim of conceptual strategies to refuse import deliveries of certain product groups gradually by replacing them with similar ones from domestic manufacturers in the age of industrial development.

In fact, it was necessary to start and run these industries, produce Russian similar goods being substituted at a certain rate and according exactly to the qualitative characteristics of the missing goods. The authors believe that

the solution of this problem has become one of the main policy priorities of the Russian Government and, thus requires further scientific background.

III. RESEARCH QUESTIONS

It seems necessary to delve into the economic subject focused on. A large-scale import substitution program ran in the Russian Federation in 2014. That program dealt with a number of key economic sectors. In E. Lukyanchuk's article, import substitution is meant as "the process of reducing or stopping import of certain goods by replacing them with similar domestic ones at the country's market that are nationally competitive or of higher consumer attributes and not more expensive than imported ones" [3]. There are other definitions of this term, but E. Lukyanchuk's definition is more specific, and the researcher investigates the very subject of this study. A very large amount of studies is devoted to the issues of import substitution in the context of new industrial economic development in Russia. The most leading scientists are V. Borodkina, Yu.Ulas, E.V. Drobot, P. Golota, who investigate the state programs of import substitution in certain Russian regions [4, 5, 6]. It is important to emphasize that V.A. Bazhanov and M.G. Mkrtychyan studied not only the issues of import substitution of food products, but also the socio-economic consequences for the state [7].

It is also important to note the fundamental research papers of such scientists as I. Ershova & A. Ershov, who concerned the current problems of developing an import substitution strategy [8]. Such authors as D. Narjoko et al. analyzed the impact of import substitution strategies on the development of work-in-progress industry in the industrial economy of Indonesia. However, to the authors' mind, the researchers made a most contradictory conclusion through the descriptive analysis, i.e., it was wrong to decide putting that strategy into practice [9].

H.J. Bruton, I. Brambilla, S. Galiani, G. Porto, E.V. Volkodavova, A.P. Zhabin, T. Goryacheva studied the historical aspects of import substitution origin, commercial and industrial policy abroad [10, 11, 12]. They are considered to be important in determining the priority approaches, motives and outcomes of the state strategy under new industrialization conditions for a long-term period. Economists G.M. Beregova, A.O. Klipin, A.R. Adewale carried out a detailed analysis of the main stages of macroeconomic industrial policy implementation and the concept of import substitution in a rather complicated world geopolitical background [13, 14]. It is definitely a valuable experience. B.R. Scott, A.A. Yarlychenko, Y. Zhou's research findings are also considered significant, as they reviewed the main industrialization policy directions of implementation in industries, the import substitution program with a state backing in certain Russian regions at present [15, 16, 17].

Along with that, scholarly interest is caused by a detailed study of import substitution programs as a supporting system developing the Russian defense industry as a new economy industrialization tool nowadays. It is reasonable to say that in the context of the security of the national economy,

'import substitution' as an industrialization tool of the Russian economy can be represented of as a kind of state strategy for long-term stagewise development that would contradict the fundamentals of market competition and modern market rules. In addition to it, the current situation does not seem to be a kind of illusion towards the historical events in the USSR, however, some historical coincidences are quite appropriate when concerning this issue.

IV. PURPOSE OF THE STUDY

The focus of this research is to review the program of import substitution in the Russian defense industry as a new industrialization tool of the Russian economy and its regulatory support to identify problems and find possible ways out to solve them in present-day Russia. These issues seem very relevant to the researchers and should be examined both analytically and experimentally.

V. RESEARCH METHODS

Analysis and synthesis of current theoretical approaches to the interpretation of the notion of import substitution made the authors give the following definition: import substitution is an important economic process that was characteristic of contemporary Russia and earlier, after the financial crisis in 1998. There was an increase of internal production then, but it became active rapidly only in 2014. Nowadays, the term 'import substitution' is often used in the basic research of Russian economists and politicians. Some experts insist on the similarity of notions 'import substitution' and 'new industrialization'. However, the authors of the paper believe that the matter is quite otherwise.

Import substitution acts as a substitute foreign-made goods for domestic ones. Nevertheless, no leap forward is implied. However, the new industrialization for Russia means re-establishment of the technological mode that was partially lost, up-coming transition to the 5th wave and making up the 6th wave of innovation. Therefore, new industrialization is supposed to be a leap forward in all economy sectors. It is important to observe that import substitution and new industrialization may operate synchronously or oppositely directed. Furthermore, import substitution can parallel to the new industrialization. And finally, new industrialization can run without any import substitution. Otherwise, speaking long-term, there will be a decrease in production yield and industrial growth. It can be explained this by a considerable loss of a country productivity in the international commerce specialization. Moreover, protectionist policy and an increasing percent of state patent minimize the motives for business risk. It results in a decreasing efficiency in general. On the other hand, an area of special scientific interest is considering import substitution as a new economy industrialization tool. To sum up, *import substitution* and *new industrialization* are completely different concepts. The first term stands for the replacement of imported goods, but *new industrialization* is a leap forward to the future. From the authors' point of view, import substitution can be regarded only as a tool, a condition for new industrializing.

The authors believe that sanction restrictions imposed by the US, the EU and other Western countries have catalyzed the finalization industry-specific import substitution programs in the Russian economy industrialization process. Consequently, a number of import substitution programs had been developed in major sectors of Russian economy by 2015 [18].

Affiliated to the government of the Russian Federation, there was a committee on import substitution issues. It consisted of two sub-committees on specific issues in different sectors of the defense industry and civilian productions. It should be noted that the import substitution program in the defense industry was also divided into two parts [18].

In the first (main) part, the ways of solving the problem of replacing the supplied products and components from Ukraine with their domestic counterparts were considered, while the second part formulated ways to solve the problem of replacing the supply of products and components from NATO countries with similar national production. In addition, the program mentioned tools that should be aimed at stimulating the development of national industry, as well as restrictive measures for the supply of foreign products to Russia. The authors believe that decumulation of import exposure in various sectors of the Russian defense industry from 80-90% to 40-50% by 2020 should stand for the findings of program implementation.

It should be stressed that a purchase ceiling for goods was fixed. It was made by the state and government-owned companies. According to that limit, the amount of domestic product supplies should be at least 80% by the end of 2017. In addition, the achievement of yearly industrial growth in various economy sectors should be a pretty significant result of the implementation of the import substitution program as a basic tool to start-up and develop the economy industrialization. Meanwhile, the achievement of annual industrial-production growth in various sectors of the Russian defense industry between 10-15% should be a very significant outcome of the import substitution program [19]. In each program, the equipment, components and materials were itemized to substitute them by similar goods made in Russia, as well as specific terms and rates in order to reduce reliance on importing equipment and accessories by 2020–2025.

VI. FINDINGS

So, substituted equipment, components and materials were included in the State Defense Order (SDO) to put import substitution programs as a tool of the new stage of industrialization in practice in certain sectors of the Russian defense industry. To participate in the State Defense Order, the companies of the defense industry must be included in the summary register. It is formed by the Industry and Trade Ministry (MIT) of the Russian Federation [20]. The State Register of the only suppliers of Russian arms and military equipment, as well as a register of strategic industrial facilities and joint-stock companies are supposed to be quite essential [21].

The President of the Russian Federation, the Government of the Russian Federation, the Military-Industrial Committee, the subcommittee in the defense industry affiliated to the Government of the Russian Federation, the Federal Service for Military-Technical Cooperation and the Federal Anti-Monopoly Service are directly in charge of the regulation and management of completing the import substitution program in the defense industry. The Military-Industrial Committee is headed by the President of the Russian Federation V.V. Putin, who is a chairman too. A standing body of the Military-Industrial Committee is the Board administered by D.O. Rogozin, Deputy Prime-Minister of the Russian Federation.

Participation in completing the State Defense Order is a peculiar form of state aid for defense companies. It guarantees a company for certain stability.

The Government of the Russian Federation approved the state program “Development of the defense industry towards the year 2020” in May 2016. It requires mentioning that the government is going to commit considerable financial resources (about 35 billion rubles) to complete it [22]. The Ministry of Industry and Trade is responsible for the implementation of this state program. The main tasks to be solved during the program implementation can be distinguished as follows:

- The development of modern types of weapons and military equipment production in Russia and their further promotion at the world arms markets;
- Providing industrial-production growth in the Russian defense industry branches;
- The arrangement of conditions in order to master human and intellectual skills at the Russian defense companies [15, 23].

The declared manufacturing output in the Russian defense industry branches is expected 1.8 times more than in 2014 as a priority outcome of the state program implementation indicated in this paper. It is worth focusing on the increase of competitiveness of various weapons and military equipment produced by companies of the Russian defense industry at the internal and foreign markets in the context of new industrial economic development.

In addition to the goals, tasks and findings mentioned above, the state program developing the defense industry provides domestic manufacturers for some supportive measures. These measures should include: a disbursement of aid-grants to companies to compensate them for the expenses connected with the State Defense Order under loans, a disbursement of aid-grants to companies to stay in business, as well as providing state guarantees.

A disbursement of aid-grants to sensitive companies to stay them in business is in charge of the Ministry of Industry and Trade of the Russian Federation. The Government of the Russian Federation takes decisions on giving state guarantees. In some cases budget investments, i.e. subsidies, repayable state loans federally funded can be suggested as a means of additional state financial support.

However, the most effective measure to support defense companies is to negotiate contracts with them to accomplish the State Defense Order, which prescribe the mandatory allowance of weapons and military equipment, as well as components for them to ensure defense capability and state security.

In consideration of the foregoing premises, it is possible to conclude that an incentive system and financial tools to support the implementation of import substitution programs in the Russian defense industry has been set up at the country level in Russia in the context of new industrial economic development nowadays. That is why it is important that the transition to the concept of import substitution was not just another political slogan, but a long-term, gradual and well-grounded policy developing the Russian economy as a whole and its leading economic sectors. However, when analyzing the implementation of import substitution programs, the authors pointed out a number of factors that caused definite problems while completing it [24].

It is worth admitting that there are such problems in various areas. First of all, the authors emphasize that regulatory support for the procedures governing contents, tenders and auctions is not well developed enough. Similar problems include the lack of information about manufacturers of domestic products. This problem is caused by insufficient arrangement of communication links between manufacturers and consumers of these products at all government levels. To the authors' mind, some paramount problems are also related to the inappropriate promotion of the brands of the leading manufacturers of domestic products, both in Russia and abroad. Modern potential consumers of military products should know how effective and available Russian military equipment is; demand trends of potential customers for military equipment and weapons produced in Russia.

The authors found out that Russia has not worked out clear regulations for passing tendering procedures. The practice examined in this research confirms that in most cases the application for a tender (contest) implies fairly large advances on account made by a motivated performer. At present, that is why there are unequal conditions for Russian suppliers and foreign agents. It is obvious that the Russian supplier needs to contract bank debts bank at some interest to take part in the competition. It will surely affect the total cost of the contract activities, which is to be agreed in the application. At best, Russian manufacturers can obtain a loan at 10-13% interest per annum, whereas in contrast, foreign competitors have an opportunity to obtain nearly interest-free loans at 0.1 or 3% interest per annum in relevant banks.

In fact, it is not enough to produce modern samples of weapons and military equipment of the highest quality to provide the state program developing the defense industry and the import substitution program as the main tools of economic industrialization. These measures will also contribute to Russian producers operating on equal financial terms with foreign competitors.

It should be mentioned that the work of product marketing, promotion and branding departments is not

arranged efficiently or completely missing in most domestic defense companies. There are no organized divisions that provide communication links between Russian manufacturers and domestic or foreign consumers. Competitive domestic products cannot find their consumers because of these problems. It must be kept in mind that the actual process of import substitution began in Russia at the end of 2014 and the beginning of 2015 [25].

Moreover, the first effects of the implementation of import substitution programs obtained in 2015 were successful for the state economy industrializing. In the food industry, 88.5% of meat and 99.8% of grain were produced by Russian manufacturers at the domestic market. The outcomes of the import substitution program in the Russian defense industry were no less significant.

An urgent problem of the Russian defense industry, as the authors are concerned, is a less-developed domestic element-component base, namely the production of components included in the electronic components of any present-day defensive products.

Thus, any Russian military or civil vessel where sensor light of this type were installed, were painted on the radar screens of surface ships and coastal guards of the enemy countries.

In the current geopolitical situation, Russia will have to do without using foreign components and technologies for military products, therefore, import substitution in the defense industry as a basic requirement for economic industrialization should be increased to 100% employment resources. Defense production in Russian companies should have a closed cycle. Russian manufacturers will be able to produce unique military equipment, providing its well-deserved selling at the world arms market where they meet the conditions mentioned above.

It seems reasonable to state that the national program of the Russian Federation "Development of electronic and radio-electronic industry in 2013-2025" was developed and approved to overcome the lack of electronic accessories. At the beginning of 2016, implementing such a program-target instrument of this Program as the subprogram "Development of the electronic component base and radio electronics for the period up to 2025" began. The project approach is applied in the program. It provides not only the development of similar electronic components, but also their introduction to the market as competitive products of mass market demand, well-promoted, and a package of documents and ISO certificates (certification of conformity) for potential consumers. The program execution is planned for a decade, and its budget will amount 120 billion rubles.

By the end of 2025, the main effect of this program implementation is going to be increasing share of radio-electronic components made in Russia for the needs of the national economy up to 35%, and for the needs of the Russian defense industry - up to 60%. At present, individual samples of weapons and military equipment are already being produced in the companies of the Russian defense industry. These items contain the base of electronic components presented by products that are made only in this country.

While completing the focused program, 4.35 billion rubles have been budgeted to carry out development efforts to produce similar domestic radio-electronic components for products of the Russian defense industry, which were purchased from foreign manufacturers before.

It is important to emphasize that the practical implementation of the program theses has resulted in the military productivity progress increased by 10.7% in the Russian defense industry in 2016. Compared to 2015, production output increased in virtually every other sectors of the defense industry. Thus, the increase in the radio-electronic industry was 18.5%, 14.5% was in the industry of ammunition supplies and special chemical agents, 10.4% - in the industry of conventional weapons, 9% - in the aircraft industry, and 4% - in the shipbuilding industry. Although, the coefficient of labour efficiency expansion in defense companies averaged 8.8%, running ahead growth of the wage level.

According to import substitution plans of new economy industrialization, the Russian defense industry will have totally refused to buy the equipment and components from Ukrainian enterprises by 2019.

In recent years, *Rosoboronexport* (the sole state intermediary agency for Russia's exports/imports of defense-related and dual use products, technologies and services) also refused to import completed armaments and military equipment from abroad and began to buy only those component parts, which have no similar specimen in Russia yet. Though, Belarus, Kazakhstan, India, France, and China were the pivotal suppliers of imported weapons and military equipment.

VII. CONCLUSION

The authors came to the following conclusions according to the research:

A high level of technological dependence on foreign-made equipment and components, combined with the United States, EU countries and their partners' set of sanction restrictions aimed at keeping down the Russian economy has endangered the security of the whole country. As geopolitical matters of the new economy industrialization currently stand, the Russian leadership has realized the importance reconsidering the development plan of the Russian economy and fulfilling it after the concept development of import substitution in the main sectors.

The remarkable thing is that it required developing not only industry-specific import substitution programs as a tool of economic industrialization, but also laws and regulations for their successful implementation as part of a number of federal laws, decrees of the President of the Russian Federation and orders and resolutions of the Government of Russia, management orders and administrative directives at the divisional level.

At the same time, in the authors' view, it is necessary to analyze best global practices of implementing the concept of import substitution as a background for the industrial development of economy comprehensively, take into account the experience gained in the elaboration of practical approval.

At the initial stage, the process consisted mostly of replacing imported food products and consumer goods industry, as well as products that do not require a high-tech production system. Thereafter, the policy directions were very specialized.

The manufacture activity analysis of the Russian defense industry enterprises revealed a number of problems that impede the implementation of the import substitution program as an industrialization tool and developed proposals to solve those problems through advanced techniques of strategic management, such as a project-based approach, outsourcing and cost innovation. The practical implementation of the identified methods will allow extending a sphere of using proved solutions from related subject knowledge, which will save the time and production resources spent on producing modern and competitive models of weapons and military equipment.

To sum up, the implementation of the import substitution program outlined by the Government of the Russian Federation takes long time, powerful production, material and labor resources, as well as investors ready to place money in the export-oriented industry.

In the long term, this policy, which is put into effect at all levels and focused on reducing dependence of strategic industries on imported raw materials resources, will result in the efficient development of the new economy industrialization, which will meet internal and in some way world market demand.

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