Dichotomy of import substitution and cooperation strategies in industry

Abstract. This article deals with one of the major issues of Russian economy - with steps towards import substitution in the key Russian industries. The research is aimed to elaborate methodological approach to import substitution in Russian Federation industry. The main methods used in our research are complex analysis and system analysis as they enable us to reveal the system and local problems of import substitution, uncover the relations and interdependence of management subjects and elements of companies in import substituting industries and to develop methodological toolkit for problem-solving. In the article, methodological approach to organizing an import-substituting industry is developed, index of evaluating the competitiveness of import substituting production is introduced based at research of 10 industrial companies. Findings of this article can be useful for scholars interested in foreign trade and for specialists in industrial sector dealing with the production processes based on import substitution.

Keywords: Dichotomy; Industrial Enterprise; Catch-up Development; Import Substitution; Product Competitiveness

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1. Introduction

Contemporary geopolitical challenges push the nation state to the accelerated development of industrial sector and to restoration of economic sovereignty. The policy of import substitution is aimed to overcome the overdependence on foreign technologies, equipment and goods in the key sectors and industries of national economy. While organizing massive import substitution, one needs to consider the cyclic nature of the process of production and of country to country transfer of related technologies when dealing with catching up industrial development. There is a need to make economic assessment of management in import substitution process, to analyse costs of fully localized manufacturing and of partially localized manufacturing in cooperation with foreign partners.


The issues of massive import substitution in Russian economy have become widely discussed by both theorists and managers-practitioners amid current crisis in world system, and Russian relations with the West. Smirnov & Dudko (2016) illustrate the innovative and investment aspects of import substitution in Russia. They argue that at present time a number of industries of national economy depend on imported products because the Russia has no competitive substitutes. Andreeva et al. (2015) analyze conditions of import substitution in different industries from the point of view of economic security of Russia. Kysil et al. (2014) present the strategy of import substitution to improve the image of Ukrainian industrial machinery on the international markets.

Russian government issued number of documents on the issue, including laws, strategic papers, grant programs, regulations etc. (For example, see Government of the Russian Federation, 2014). It is not by chance that in 2015 the Presidential Address to the Federal Assembly outlined the importance to support the competitive national enterprises eager to produce competitive products for both internal and international markets (President of the Russian Federation, 2015). Lately Russian Government elaborated more than 1000 projects aimed to support import substitution in the branches where sanctions inflicted most damage: technologies of oil and gas extraction, information communications technologies and software, spare parts for military equipment and machines, etc. These industries tend to ensure as much independence from foreign suppliers as possible for the participants from certain country to understand the limits of its competences, and to abstain from taking efforts to relocate resources to the other promising projects. If current production is lagging behind industry’s trajectory was false, it is better to use foreign experience and to relocate resources to the other promising projects.

Stated in post-industrial society demand shifts rapidly. As a result, the speed of technological changes also is dramatically increasing, thus considerably shortening planning horizon. As the government institutions are mainly focused on empowering stability in social and economic sphere, they are largely missing these shifts. Many countries face the same problem, threatening to turn them in outsiders of post-industrial breakthrough. To add to this already worrying situation, Russia was behind most of the countries in the Organization for Economic Cooperation and Development at the start of the competition. At the same time, we overlook that import substitution stage is only a special case in the cycle of developing perspective production use of the implemented technology.

The analysis of alternative production costs when production is organized by own means of a company or within international cooperation demonstrates that import substitution strategy bears the internal dichotomy for industrial enterprises. The projects of international scientific and industrial cooperation make it possible for the participants from certain country to understand the limits of its competences, and to abstain from taking efforts in the situation with uncertain results; to optimize allocation of resources, while acquiring products or spare parts from the leading producers. If current production is lagging behind industry’s leaders with little chance to catch up, contemporary technology trajectory was false, it is better to use foreign experience to relocate resources to the other promising projects.

This is the advantage for a developing country - not to make a long way of theoretical and applied research that can take up to ten years for the certain types of complex technologies. It is optimal to transfer international experience and technologies from the market leaders, and to concentrate sparse resources on pioneer research in deferent spheres. Some time ago, Russia was a leader in aviation and space industry, nuclear power engineering, materials technologies, the developed international specialization and cooperation made it possible to produce competitive production popular in the world. It is clear that the quality and price of goods and spare parts should be comparable to the present world level of technology and equipment development - otherwise the introduction of WTO rules and open market, import substituting...
products will be non-competitive, no matter how strong are the calls to buy national goods.

Globally Russia's stand looks firm in iron and steel industries, nonferrous industry, electric power production, petrochemical industry, forestry, defence industry; it also has reasonable impact in chemistry, car manufacturing and shipbuilding, machine building, and instrument producing, while lagging behind in civil aviation industry, electronics, and textiles (Finawall, n.a.).

Russia is competitive in different industries:
- nuclear power engineering,
- cosmonautics, aviation industry,
- new materials,
- chemistry (mainly, catalytic), biotechnologies,
- applied mathematics and programming,
- technologies of extraction and processing of raw materials,
- superconducting and laser technologies,
- alternative energy,
- microwave electronics.

It should be noted that Russia launched a lot of metalworking machinery, therefore there should also be a big potential in this sphere. Moreover, the resource structure of the country contributes to appearing the competences of this kind. It is not by accident that Russian economy in 1998-2008 started to reconstruct the manufacturing sector that was previously well developed, and medical sector that was almost completely lost during the time of post-soviet reforms.

3. Results

The research has shown that even amid western sanctions new industrialization in Russia continue to rely upon technologically advanced products and equipment imported from the developed countries, with further import substituting production and export of final products. This complex process can be divided into five phases: preliminary (1), import substitution (2), export (3), maturity (4), reverse import (5), (see figure 1).

This figure demonstrates that producers get the main profit on the stages of import substitution, own production growth and export, here we see the influence of the character of demand development and demand level for a certain product on the national market. When the countries that started industrialization later catch up, production is moved there, and a small part is continued to be imported for the consumers who prefer a certain brand and need spare parts and repair kits.

The most important thing in import substitution process is to organize it, and not to disrupt the existing business. One need to combine flexible project management with routine procedures, the existing hierarchical management structure with project teams working on import substitution. It is clear that for efficient import substitution it is necessary to provide strategic analysis to evaluate market dynamics to prevent current production from collapse like the one witnessed by Russian military industrial complex in the 1990s, when production of military hardware was cancelled, but industries failed to switch to consumer goods, and as a result domestic market’s dependency on imported industrial and consumer products grew substantially.

Additional research is needed for the characteristics of internal and external environment factors influence on the competitiveness of national economic system, internal (endogenous) and external (exogenous) factors of companies’ competitive advantages. The relative character of the competitive advantage means it is necessary to monitor the competences of the competitors and evaluate own potential in comparison to the potential of competitors (Yakovlev, 2007). Porter (1993) pointed that «competitive advantage is growing from all the system of activity types, the success is determined not only by production factors, but the fact where and how efficient they are used».

Studying the peculiarities of the world technological development and the experience of conversion in national industry help to develop the methodological scheme of organizing import-substituting production related to the main industrial processes (see figure 2). This scheme is a new scientific result revealing the technology and the sequence of organizing import substituting production at industrial enterprises. Its generalization is the formula for evaluating the degree of the competitiveness of import substituting production, developed by the authors.

It is important not to break running chain of creating value on the main production, and to start the new import substituting production simultaneously on free production lines, or by increasing the capital productivity.

The main risk of import substitution policy is inability hierarchical organization within industrial enterprises to produce innovations - in order to progress company ought to be flexible and adaptive. For many years enterprises could succeed by using single well-developed technology. But now to be competitive means to innovate constantly, to introduce new technologies onto production on daily basis. Here enterprise meets two risk to its capital stability, as while innovating, it can lose running production which generates much income.

At the first stage, there is a need to distinguish the import substitution units from the other units within the enterprise. The employees in this unit should be creative, apt to deliver high-end creative product; if company lacks such personnel, it is of vital importance to hire qualified employees. They should work independently in order to keep their creative values intact by routine massive production, as they will produce nonstandard research targeted on developing of the innovative import-substituting product. When the concept of new product is developed, and implementation stage is running, innovative unit is to establish links with the main production facilities. Innovative projects become the bridge, because here both the employees of import substitution teams and main industrial personnel are engaged in work. It is a natural step: innovations need technological support from the main production.

Eventually, a number of creative teams can be increased, the share of employees of innovative projects can reach up to 50% - and inevitably, they start applying the elements of innovative approach to managing the creation of import substituting production in current work. The authors believe that the process of import substitution as a type of innovative strategy should be based on market research, as the cost of the production mistake, when making the non-competitive product, is extremely high for Russian enterprises as they lack, financial safeguards and access to cheap credits.

It is clear that in the situation of competitive market even the successfully implemented import substitution product can become non-competitive: initial investments were not materialized, market volume was too narrow, the price of the production unit appeared to be too high etc. Besides, it should be to consideration that the leading industrial companies annually spend tens of billions of dollars for perspective projects, while Russian companies do not afford this: for example, Japanese company «Toyota» spends USD 9.9 bln for research and development (Milov, 2012).

The demand for the product to be competitive fundamental. The degree of import substitution product competitiveness is compared with the competitors in a certain period of time t by comparing the relation of prices of their acquisition and the sums of consumer’s effect according to the following equation (1):

\[
K_P = \frac{\sum (\Delta x_t / \Delta x_0) \times U_t / U_0)}{T},
\]

Fig. 1. The sequence of import growth, domestic manufacturing and new production export within national economy

Source: Compiled by the authors


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where \( \Delta \pi_t \) - sum of profit that consumer will have by acquiring the import substituting product; it is determined as the difference between the sum of consumer's eﬀect from import substituting products of the enterprise in the consumption year \( t \), in rubles and the sum of costs for buying and maintenance of import substituting products of the enterprise in a time period \( t \), in rubles;
\[
\Delta \pi_t = \sum \text{consumer's eﬀect} - \sum \text{costs for buying and maintenance}
\]
\( T \) - actual product life cycle;
\( t \) - period of time for which the degree of the competitiveness of import substitution product is calculated;
\[
\frac{U_t}{U_c} = \frac{\text{cost for utilizing the import substituting product}}{\text{cost for utilizing the foreign competitor's product}}.
\]

Evdokimov and Zhichkin (2016) note that despite the dominance of import substitution when producing the ready-made goods that could be competitive on world market.

4. Discussions
In economic literature, import substitution is often seen as a model of integration of national economy into the world economic system, and an engine of the economic growth. This model is based on the idea of industrial import substitution as a push for development of the internal market for industrial goods.

Theoretical models of industrial import substitution were long ago praised as a mean for economic growth, particularly by the representatives of neo-Keynesian school (see Chenery & Karter, 1972; Chenery & Strout, 1966, and Chenery & Syruqui, 1975).

The implementation of the import substitution strategy as a key to development of the export potential by industrial enterprises is considered by Vashchenko (2015). Faltsman (2015) makes the literature overview and describes the possible consequences of sanctions for import substitution. The authors developed theoretical and methodological models of import substitution to contribute to decision-making of the import substitution by Russian producers in focus of organizing the economically grounded, rational level of import substitution by Russian producers in focus of organizing the economically grounded, rational level of import substitution when producing the ready-made goods that could be competitive on world market.

We should agree with Omarov (2010, p. 318), who thinks that today there is a need in the integrate program of reforms and development of national economy and industrial complex as its important part for development the massive import substitution. The adequate attitude towards import substitution is already developed in Russian Federation. Klimuk and Klimuk (2016) rightly say that import substitution being the strategic focus of the economy of any country, should be based on rational approach. There is a need in the massive transfer of technologies from the international leading producers in all industries. Klinov (2010) describes that substantial scientific and technical potential was accumulated globally during last 200 years. For example, labour efficiency in the USA exceeded 10 times respective index at the beginning of the XX century, and if we are talking about 200 year period - the rise was almost 30 times. The acquired technological potential provided the prerequisites
for the fast (compared to the leading economies) advance in the catch up development of the countries having cheap workforce, and also for their superior innovations. The catching up life cycle showed a number of advantages for the countries of the South-Eastern Asia. The model of import substitution suggested for Russia can very quickly be exhaust because of its weak development and limited national markets, especially in the situation of hyper competition and constant diversification of the consumer market. Attention should be paid to the introduction of the international industrial cooperation and on the possibilities of the renewal and development of the national industrial production, as the curves of import growth, internal production and export of production are interconnected (Mikhailovskiy, 2001, p. 184).

A lot of scholars, namely, Evdokimov and Zhichkin (2016), Volkodavova and Zhabin (2016a, 2016b), Volkodavova and Zhabini (2016), Karsuntseva (2016), Alexandrov et al. (2015) point that import substitution needs special legislation to be developed by the government in order to define the strategic focus of the economic policy. It should be noted that majority of experts understand the necessity to organize the work on major import substitution in national economic sectors. The main focus of professional levels is the extent of scale of import substitution spread in the national economy.

As a result of the budget limitations, Russian ministries carefully plan and organize public procurement and decide on government support to specific projects (Expert Online, 2015). The work on the list of the public procurement in the key spheres for foreign technological equipment is under way, to grant access to advanced technics to national producers, especially to those who are responsible for big investment projects, or deals with immediate purchase from state and municipal customers. These particular types of activities represent cases where industrial policy becomes a category of national security (Karsuntseva, 2016).

The system of methodical, scientific and practical recommendations on import substitution model and methods of evaluation of the competitiveness of import substitution products can be decision-making tool for import substitution programs in the industrial enterprises and government bodies responsible for the industrial policy.

5. Conclusions

Nowadays, many technological leaders support globalization aiming to enter domestic markets, suppress local producers, and get the quasi monopoly profit. The policy of deindustrialization of Russian Federation to turn it into raw materials exporter can be override only as a part of focus on national sovereignty, and depend on state of import dependence.

While praising the import substitution policy many authors miss the necessity to study the dichotomy of cooperative and import substitution strategy. At present time, the conclusion about the high efficiency of linear innovative model of market pull is becoming popular and has the grounding because commercially successful innovations comes as result of consumer demand and focused corporate research and development. Certain factors should be a part of government programs. However, comparative competitive advantages can be ensured and international industrial cooperation should be developed with the friendly countries, mainly from the Eurasian economic union.

References


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