

# Analysis of Implementation of Import Substitution Policy on the Russian Agricultural Machinery Market

Oksana Vaganova

Department of Economic Innovation and Finance  
Belgorod State National Research University  
Belgorod, Russia  
vaganova@bsu.edu.ru

Andrey Peresyppkin

Vice-Rector for the Implementation of Strategic Development  
Programs  
Belgorod State National Research University  
Belgorod, Russia  
peresyppkin@bsu.edu.ru

Natalya Solovjeva

Department of Economic Innovation and Finance  
Belgorod State National Research University  
Belgorod, Russia  
solovjeva@bsu.edu.ru

Dmitry Polunin

Institute of Economics and Management  
Belgorod State National Research University  
Belgorod, Russia  
1198386@bsu.edu.ru

**Abstract**—The article analyzes the structure of the agricultural machinery market in Russia. The level of development and potential of Russian manufacturers and their involvement in world markets are considered. The problems preventing Russian companies from completely replacing foreign competitors are described, as is the role of the State in solving these problems. An analysis of the implementation of the import substitution policy on the market of agricultural machinery in Russia showed that foreign models of agricultural machinery (mainly from Belarus and China) currently occupy most of the domestic market. Some of them are produced on the territory of the Russian Federation. At the same time, the number of Russian machine-building companies is constantly decreasing and the number of workers in the industry is declining. To solve these problems the directions of support for the Russian agricultural engineering are proposed, which include encouraging investment in leading Russian companies, creating an enabling environment for export development, financing the training of qualified personnel, and reducing the tax burden in mechanical engineering and Agro-Industrial Complex.

**Keywords**—*agricultural machinery, import substitution policy, agro-industrial complex, import, export*

## I. INTRODUCTION

The most important driving force of the Russian economy over the past 10 years has been the idea of an accelerated technological breakthrough. This has been facilitated by the prevailing external economic and political environment, which has revived the activities of domestic manufacturers of high-tech goods. This, in its turn, has led to the development of the import substitution process. The production of agricultural machinery is one of the main directions of the import substitution process, which affects the economic

security of the State due to the significant contribution of the agro-industrial complex to Russia's GDP.

## II. MAIN PART

Increasing the competitiveness of the Russian agro-industrial complex (AIC) is a pressing problem in the development of domestic agriculture. Technical modernization, based on priority development technologies, is of great importance for Russian manufacturers of agricultural machinery and for the State as a whole, since it is the basis for the country's food and economic security.

Currently, the market for agricultural machinery in Russia is influenced by various factors, among which the following should be mentioned: the availability of credit resources to the consumer of agricultural machinery, the customs policy related to foreign manufacturers of machinery, the share of secondary machinery market, the level and mechanisms of state support for both agricultural manufacturers, and agricultural engineering [1].

Implementation of import substitution policy is a necessary measure of the State, since the technical dependence of domestic producers on the external market is gradually becoming an economic dependency and leads to a lag in the pace of development from individual industries and the entire State [2].

In order to determine the level of technical dependence of Russian agricultural manufacturers, it is necessary to analyze the current technical equipment in the agro-industrial complex. Table 1 presents data on the following groups of agricultural machinery: harvesting equipment (combine harvesters), agricultural tractors. These tables are based on the aggregate indicators of the agricultural machinery market in Russia over the past 5 years [8].

TABLE I. STRUCTURE OF THE RUSSIAN AGRICULTURAL MACHINERY MARKET (BY AGGREGATED PRODUCT GROUPS)

Indicator	2015		2016		2017		2018		2019	
	Number of units	Market share, %								
<b>Tractors for farming and forestry</b>										
Russian brands	2 586	9.6	2 854	13.7	2 410	9.1	2 593	9.9	2,427	10.3
Foreign brands assembled in Russia	1 443	5.4	950	4.5	1 979	7.5	1 742	6.7	3,382	14.5
Imports from the Republic of Belarus and Kazakhstan	12 024	44.5	8 170	39.3	9 832	37.2	10 307	39.4	11 234	48.0
Imports from other countries	8 605	31.8	5 844	28.1	9 896	37.5	8 668	33.1	6 347	27.1
Total	27 048	100	20 815	100	26,423	100	26 160	100	23 390	100
<b>Combine harvesters</b>										
Russian brands	3 245	63.7	4,529	71.4	4 263	66.3	3 634	69.1	3 787	68.1
Belarusian brands assembled in Russia	983	19.4	1 214	19.1	904	14.1	310	5.9	421	7.5
Foreign brands assembled in Russia	362	7.2	381	6.0	555	8.6	594	11.3	771	13.8
Imports from Belarus	411	8.1	97	1.5	268	4.2	198	3.8	228	4.1
Imports from other countries	87	1.7	119	1.9	438	6.8	525	9.9	352	6.3
Total	5 088	100	6 340	100	6 428	100	5 261	100	5 559	100

As can be seen from the table, the market of agricultural tractors in Russia is still dominated by imported goods, Russian production accounts for about 15% of production annually. Moreover, only about 10% of this number is domestic.

The situation on the market of combine harvesters is the opposite: more than 85% of the machinery is produced in Russia, 70% of which are domestically produced combines. The predominant foreign supplier is Belarus, almost half of the imported tractors and combine harvesters are produced there.

Combines and tractors occupy the largest market share in value terms (Fig. 1, 2). Based on an analysis of the sales in recent years, it is possible to draw conclusions about the need to introduce a policy of import substitution of agricultural machinery in Russia. Although, it is certainly very difficult to compete with the largest transnational corporations like Claas, John Deere, New Holland, Agco, which supply equipment to the Russian market [13].

**Agricultural tractors**



Fig. 1. Dynamics of import substitution in the agricultural tractor market in Russia (2015-2019)

**Combine harvesters**

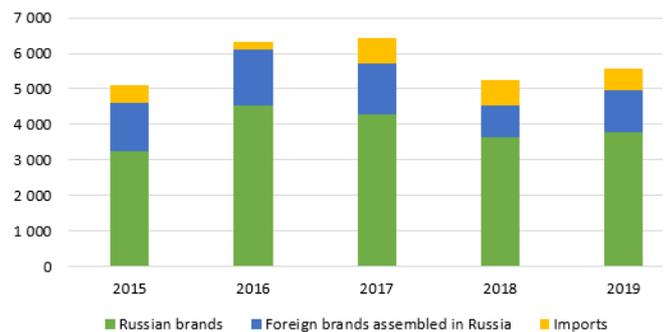


Fig. 2. Dynamics of import substitution in the market of combine harvesters in Russia (2015-2019)

The figures above show the increase in the share of Russian manufacturers in the agricultural machinery market is slow, with a large share of import substitution falls on the production of foreign models in the Russian Federation, which is not import substitution from a technological point of view. At the same time, the problematic sector of the market is precisely the production of tractors for agricultural needs.

The largest localized manufacturers of agricultural machinery in Russia are the Bryanskselemash plant, the Shimanovsky machine-building plant Kranspetsburmash, which assemble combines from the machine kits of the Belarusian manufacturer Gomselmash. It is also possible to highlight the plant Omsklidagromash, which assembles the equipment of the Belarusian manufacturer Lidagroprommash [11].

Among the cross-border supplies to the Russian market, special mention should be made of imports of tractors for agricultural work and forestry from near foreign countries.

The import of tractors from other countries (China, South Korea, Japan, USA, Italy) is distinguished by “polarization”, and this is expressed in the fact that tractors entering the Russian market are either low-power equipment or, on the contrary, high-power equipment.

Thus, the Russian market for agricultural machinery remains dependent on the world’s largest importers, particularly China. Russian production of agricultural machinery has not kept pace with that of the world. Consider the reasons for the lag.

1. The reason for the competitive advantage of foreign suppliers is their technological development. As for Russian companies, they occupy only the market of medium- and low-class equipment.

2. Russian manufacturers are highly dependent on State support, since agriculture is traditionally a subsidized sector because of its strategic importance for the country’s economic security, which creates dependency on government policies and deprives companies of decision-making flexibility.

3. Narrow export distribution channel, limited for the most part by the countries of Commonwealth of Independent States (CIS), as evidenced by the data in Figure 3, which shows the structure of Russian exports of agricultural machinery to the top 5 countries in terms of supply value.

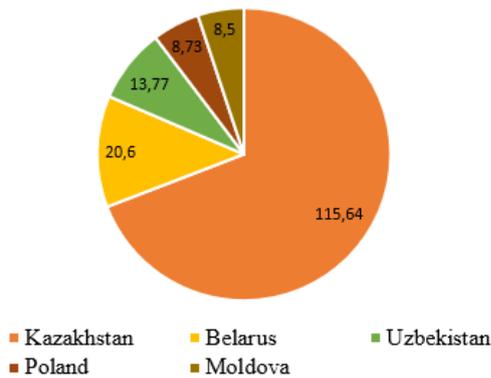


Fig. 3. Structure of Russian exports of agricultural machinery by major partners (\$1 million)

Based on the data provided above, it can be concluded that Russia has not been incorporated into the world’s leading markets for agricultural machinery, owing to both geographical distance s from agrarian regions and external political and economic problems.

**III. FINDINGS AND SUGGESTIONS**

Without full access to foreign markets, it is difficult for Russian manufacturers to count on sales stability, which the domestic market cannot fully ensure. The State has therefore taken steps in recent years to support domestic exports. The main ones are subsidizing a part of transportation costs related to registration in external markets and certification of products, assistance in attending exhibitions, and export credit subsidies and insurance.

However, Russian production has several advantages and opportunities for development. Let us distinguish the main ones:

- Relatively low cost of labour in the country.

- Experience gained since the USSR times, technical and personnel equipment.
- Extensive domestic market, under-equipped domestic AIC.
- Development of a leasing sales system.

Using these factors, Russian manufacturers can gradually remove imported machinery from the market by implementing the idea of import substitution in AIC. The effective development and realization of the inherent potential are not possible without the involvement of the State. State support should be provided in the following areas:

1. Encouraging investment in leading Russian companies.

According to Rosstat, the volume of investments in agricultural engineering in recent years has fluctuated around 5 billion rubles per year (Fig. 4).

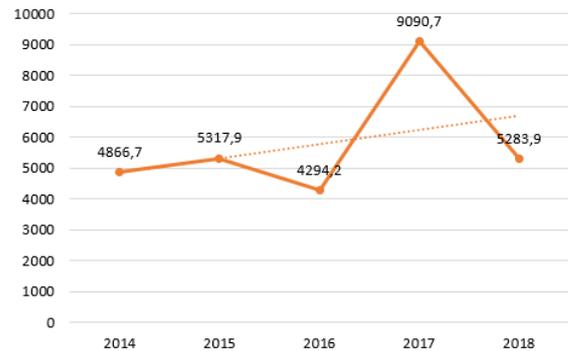


Fig. 4. Dynamics of investment in agricultural machinery production in 2014 - 2018 (RUB million)

Attention is drawn to the high investment rate in 2017 due to the construction of new production points by some leading machine-building companies. Trend line over the specified interval also has positive dynamics. Nevertheless, it is obvious that in order to strengthen the role of Russian manufacturers in the market, it is necessary to increase the volume of their investment.

In 2019, the Government of the Russian Federation took the following measures to invest in the development of agricultural machinery:

- Direct subsidies to manufacturers (8 billion rubles annually in 2020-2022).
- Preferential leasing of special equipment.
- Concessional loans (around 5% per annum).
- R&D funding.

2. Creating an enabling environment for export development.

Until 2025, the Russian Government’s strategy for the development of exports of Russian agricultural machinery is in force. The approved export development strategy envisages that supply to foreign markets will become the main driver of the development of the Russian agricultural machinery industry as a whole. By 2025, the ratio of agricultural machinery exports and shipments of agricultural engineering products to the domestic market should be 50%. That is, one third of Russia’s production must be exported. This compares to 12% in 2017.

As we have described above, the main challenge in the area of exports is the transition from trade with near-abroad countries to leading world markets. In this regard, the Government of the Russian Federation has adopted Decrees in the following areas:

- Support for the export of high-tech products (Decree No. 488, 957, 1368, 1388).
- Export insurance (Decree No. 964) [10].

In our view, besides economic support, the development of Russian exports depends on the foreign policy results of the State's activities and its prestige abroad.

### 3. Financing the training of qualified personnel.

Increasing the volume of industrial production is impossible without recruiting new workers, including those engaged in intellectual labor: engineers, designers, IT specialists. Figure 5 shows the development of the total number of employees in agricultural machinery production in Russia in 2014-2018 based on Rosstat data [8].

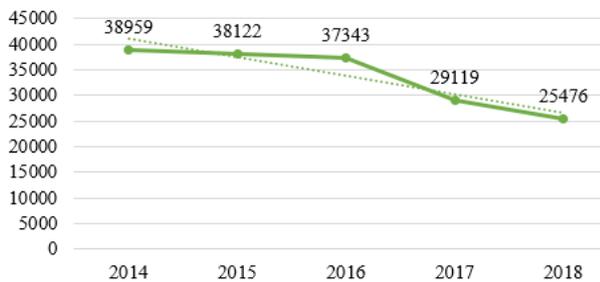


Fig. 5. Average number of employees of agricultural and forestry machinery and equipment manufacturing organizations in 2014-2018 (people)

The chart shows the number of employed persons has been declining steadily in recent years, with a total decrease of 13,483 people (34.6%) in five years. This is directly related to the reduction in the number of companies engaged in the considered type of activity and the increase in production concentration. Technological progress and the replacement of human labor by machine work can also be seen as indirectly responsible for the reduction in the number of workers, but this only highlights the need to increase the number of qualified staff.

### 4. Reducing the tax burden in mechanical engineering and AIC.

According to the data of the Federal Tax Service of the Russian Federation, the total tax burden on mechanical engineering enterprises in 2019 was 4.68%, of which 4.01% was the value added tax burden.

In 2019, there was a reduction in the tax base on income tax for agricultural machinery enterprises in the amount of the actual costs with a coefficient of 1.5 (Decree No. 609, 988). This measure is insignificant, as the average industry's income tax burden is only 0.59% [9].

## IV. CONCLUSION

An analysis of the implementation of the import substitution policy on the market of agricultural machinery in

Russia showed that foreign models of agricultural machinery (mainly from Belarus and China) currently occupy most of the domestic market. Some of them are produced on the territory of the Russian Federation. The market share of domestic companies in the production of the main types of agricultural machinery remains unchanged: about 10% of the sales of tractors, less than 70% of the sales of combine harvesters. At the same time, the number of Russian machine-building companies is constantly decreasing and the number of workers in the industry is declining.

To implement the import substitution policy and stimulate manufacturers of agricultural machinery, the State is taking steps to subsidize production; simplify and insure exports and finance training; reduce the tax burden of agricultural machinery. However, based on the dynamics of the policy analyzed, the authors conclude that the scope of the measures taken is not sufficient and the task needs to be addressed more thoroughly at the methodical and methodological levels.

## REFERENCES

- [1] P.B. Boldyrevsky, and L.A. Kistanova, "Tractor and Agricultural Machine-Building Industry in Modern Conditions" [Traktornoe i sel'skhozoyajstvennoe mashinostroenie v sovremennyh usloviyah] (in Russian), *Promyshlennoe razvitiye Rossii: problemy, perspektivy, Materials of the XVI International Scientific and Practical Conference: in 2 volumes*, pp. 103-106, 2018.
- [2] O.V. Vaganova, A.B. Titov, N.E. Solovjeva, and N.I. Bykanova, "Influence of the sanctions regime on the regional innovation system formation (the case of the Belgorod region)", *International Journal of Economic Perspectives*, vol. 11, iss. 3, September 2017.
- [3] O.V. Vaganova, N.E. Solovjeva, A.M. Kulik, and D.P. Koryakov, "Trends in the development of the agroindustrial complex of the Belgorod region in the digital space", *The Economics of sustainable development*, 4 (40), 2019.
- [4] O.V. Vaganova, N.E. Solovjeva, N.I. Bykanova, and N.S. Melnikova, "Management of outsourcing risks in the process of enterprise", *Financial activity, Financial and credit activity: problems of theory and practice*, vol. 2, no. 23, pp. 110-117, 2017.
- [5] V.N. Kuzmin, and A.V. Goryacheva "Export of Russian Agricultural Machinery: Is It High Time or Too Soon for It?" [Eksport rossijskoj sel'skhozoyajstvennoj tekhniki: aktual'no ili prezhdvremenno?] (in Russian) *Ekonomika i organizaciya inzhenerno-tekhnicheskikh sistem v APK*, Materials of the international scientific-practical conference, no. 5, pp. 51-55, 2018.
- [6] R.E. Jr. Lucas, *Studies in Business-Cycle Theory*, Cambridge, MA, 300 p., 1981.
- [7] O.A. Chernova, I.V. Mitrofanova, N.P. Ivanov, and R.A. Yalmaev "Import Substitution Potential of Russian Agricultural Engineering: Assessment, Risks, Ways to Implement" [Importozameshchayushchij potencial rossijskogo sel'skhozoyajstvennogo mashinostroeniya: oценка, riski, puti realizacii] (in Russian), *Teoriya i praktika obshchestvennogo razvitiya*, pp. 21-31, 2019.
- [8] Official Website of the Russian Federal State Statistics Service. URL: <http://www.gks.ru> (access date: 10/15/2020).
- [9] Official Website of the Federal Tax Service of Russia. URL: <http://www.nalog.ru> (access date: 10/15/2020).
- [10] Official Website of the Government of the Russian Federation. URL: <http://www.government.ru> (access date: 10/15/2020).
- [11] Official Website of the Russian Association of Specialized Machinery and Equipment Manufacturers. URL: <http://www.rosspetsmash.ru> (access date: 10/15/2020).
- [12] National Agrarian Catalog "Agricultural Machinery" for the second half of 2020. URL: <http://www.selhoz-katalog.ru/> (access date: 10/15/2020).
- [13] "Agroinvestor" Electronic Magazine. URL: <https://www.agroinvestor.ru/tech/article/29911-tehnika-menyayet-grazhdanstvo/> (access date: 10/15/2020).