The impact of the competitiveness of Russian agri-food products on the dynamics of Russian foreign trade

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Abstract. The article notes the special importance of the turnover of food products and agricultural raw materials in international trade. Based on the analysis performed, it was revealed that despite the positive dynamics in the structure of foreign trade in food products (reduction of imports and increase in exports), the trade balance of these products remains negative. To overcome this trend, it is necessary to solve a set of tasks related to the growth of production and increase of competitiveness. In order to identify the price competitiveness of domestic agri-food products, a comparative analysis of the competitiveness of average producer prices and export prices for the main types of products in 2013-2017 was carried out in the Russian Federation and in the leading countries in the export of these products in the world. The study shows that Russian prices were competitive in most of the considered types of agri-food products. The result of the import substitution policies in recent years was the growth of production and the reduction of imports for a number of agri-food products. In addition, the depreciation of the national currency ensured the growth of competitiveness of domestic agri-food products on the world market and led to an increase in exports. In order to increase the competitiveness of products, it is necessary to consistently reduce production and logistics costs, reduce losses through the use of innovative technologies, and improve product quality. In order to systematically increase agricultural exports, it is necessary to create a modern export infrastructure, form an effective system of branding and promotion of Russian agri-food products, develop a coordinated system of measures of state support for non-primary exports.

1. Introduction

Foreign trade is an important factor in the formation and development of the country's economy, budget formation, ensuring the profitability of producers, and maintaining the well-being of the population. The previous model of interaction between Russia and the world market did not correspond to the potential opportunities of our country or strategic economic interests. In many respects, this was due to the raw materials orientation of exports, the insufficiency of the production base, and the low competitiveness of products. Of particular importance in international trade is given to the turnover of food products and agricultural raw materials, since sufficient internal security of domestic food and the ability to realize its surplus in foreign markets characterize not only the level of food independence of the country, but also the qualitative structure of foreign trade. In this regard, the
study of the competitiveness of domestic agri-food products and the identification of its impact on the volume of foreign trade is extremely important.

The problem of increasing the competitiveness of domestic agri-food products has been on the agenda for more than a dozen years. At the time of reform, the 2006 Federal Law “On the Development of Agriculture” adopted (in paragraph 2 of Article 5) the main objective of the agrarian policy, which was to increase the competitiveness of Russian agricultural products and agricultural producers[1]. Many of the provisions of the current State Program for the Development of Agriculture and Regulation of the Agricultural Products, Raw Materials and Food Markets for 2013-2020 of the Russian Federation are aimed at improving the competitiveness of both the industry as a whole and certain types of agri-food products [2].

According to the May 2018 Decree of the President of the Russian Federation “On the National Goals and Strategic Objectives of the Development of the Russian Federation for the Period up to 2024,” it is planned to ensure the growth rate of the Russian economy above the world ones by increasing the economic competitiveness, strengthening the agro-industrial complex, creating the highly productive export-oriented sector with the growth of exports of products by 2024 to $45 billion a year, which is almost 2.2 times more than in 2017 [3]. To achieve these goals, it is necessary to solve a whole range of tasks related to developing the high-tech production of agri-food products, increasing its exports, especially in terms of high value-added products, improving the quality and competitiveness of domestic products.

Increasing competitiveness and developing competitive advantages of agri-food products in foreign markets become an increasingly important problem in the research aspect and in the practice of development and regulation of the agricultural sector, especially in connection with the development of globalization and integration processes.

2. Theory

The research is based on the fundamental principles of economic theory: the theory of development, growth and competitiveness, the theory of international trade. International trade serves as a tool through which countries, developing their specialization, can ensure the growth of production, increase the productivity of available resources, and thus increase the volume of goods and services produced by them, increase the level of population welfare.

Despite significant theoretical and empirical studies on the problems of competition and competitiveness, unified scientific approaches to this economic category have not yet been formed. In the 1980s, it was included in the key national problems in the most developed countries of the world, such as the USA, Japan, Germany, England, France, etc. As a result of global studies conducted over several years, statistical information was compiled for 1970-1987. Based on its generalization, Michael Porter developed the concept of competitiveness and competitive advantages [4]. Some aspects of the problem of competitiveness are presented in the works of I. Ansoff, P.F. Drucker, B. Karlof, J.-J. Lamben, D.H. Harrington, J. Schumpeter, and others. [5] The first domestic serious studies in the field of competitiveness appeared in the 1990s. Among the most significant works of that period, the works of G.L. Azoev, P.S. Zavyalov, R.A. Fatkhutdinov, A.Yu. Yudanov, N.S. Yashin, and others could be noted [6].

A group of contemporary foreign authors, such V. Eldon Ball, Jean-Pierre Buto, Carlos San Juan, Ricardo Mora, continues developing theoretical approaches to the problems of international competitiveness and the growth of agricultural production in the European Union and the United States [7, 8, 9]. The issue of limiting the liquidity of exporters, associated with a negative change in the exchange rate of the national currency, requiring a corresponding adjustment in the country’s export structure and leading to a decrease in the competitiveness of producers in world markets, is the study of T. Cheney [10].

The study of foreign trade of the Russian Federation is devoted to the work of a number of foreign and Russian scientists. Thus, in the study of authors L. Smutka, J. Spik, N. Ishchukov, R. Selby, the
impact of the ban on agricultural imports on the agrarian trade indicators of Russia and the European Union is analyzed [11]. M. Maytah, E. Kuzmenko, and L. Smutka analyze the impact of the dynamics of the Russian ruble on the position of producers in foreign markets. They also, based on the indicators of comparative competitive advantages (indices Ballasy, Lafeya), calculate the level of competitiveness produced in Russian products [12]. V. Obolensky analyzed the main directions of foreign trade of Russia in the context of declining world prices and imposed economic sanctions [13].

The authors of this article carried out studies to assess the competitiveness of domestic agri-food products in the Russian Federation and in the countries of the Eurasian Economic Union [14, 15]. This article develops research on the issues of improving competitiveness, in particular price competitiveness, and identifying its impact on the dynamics of foreign trade of the Russian Federation.

3. Methods

The studies were conducted on the basis of the following methods: monographic, statistical groups, a method of comparative analysis, a method of expert assessments, a computational-constructive method.

The research database was compiled by UN statistics (UN Comtrade) and FAO (FAOSTAT), data from the Federal State Statistics Service of the Russian Federation, information from the Ministry of Agriculture of the Russian Federation, and other official information sources.

4. Results

After the crisis of 2014, the foreign trade turnover of the Russian Federation was constantly decreasing (by 45% over three years since 2013). In 2017, for the first time in five years, there was a significant increase in foreign trade turnover, an increase of almost 25% over the previous year, while exports and imports increased at the same rate. The trade balance remained positive.

In 2017, there was also a significant increase in foreign trade in food products and agricultural raw materials (by 17.8%) (Figure 1). In recent years, the export of domestic food products and agricultural raw materials is growing. In 2017, its volume increased by 21.3% and reached $20.7 billion. Import of agricultural products and foodstuffs also increased, but at a significantly slower pace (115% by 2016), and reached $28.9 billion.

In the Russian Federation, the importance of foreign trade in food products and agricultural raw materials is increasing. Thus, the share of foreign trade turnover attributable to food in 2013 was 7.1%. This figure rose to 8.5% in 2017.

Evaluating the dynamics of foreign trade in agri-food products for the period 2012-2017, it is necessary to note a positive trend: the volume of food exports over the past six years increased by 23%, while import volumes decreased by 29%. However, the trade balance of food products and agricultural raw materials is still negative.

To overcome this trend, it is necessary to solve a whole range of tasks related to the growth of production and labor productivity, increasing the competitiveness of both the industry as a whole and certain types of agricultural products. In general, the efficiency of agricultural production in Russia is still lagging behind the leading world agricultural powers. Among the most significant risks in the agri-food sector are the lag in the technological development level of the agro-industrial sector and differences in food safety requirements and an ineffective system of control over their observance, which ultimately determine the competitiveness of products, both by price criteria and by quality.

To determine the impact of the competitiveness of agri-food products on the dynamics of foreign trade, in particular the growth of export operations, in order to achieve a positive balance in foreign trade in food products and agricultural raw materials, one of the main criteria for competitiveness was studied, which is the price factor in the context of the main types of agricultural products and food:

- Agricultural products: wheat, barley, sunflower seeds, potatoes, apples;
- Food products: vegetable oil, wheat flour, pork, poultry, and sugar.
The dynamics of the foreign trade turnover of the studied types of products is multidirectional. Over the last five years, the volume of foreign trade (in natural terms) in wheat increased almost 2.2 times. There was an increase of 3.8 times in sunflower seeds, 1.8 in barley, 1.7 in sunflower oil, 1.5 in potatoes and wheat flour, and 1.3 in sugar. At the same time, for such commodity items as pork, there was a decrease in foreign trade turnover by almost 2 times, the volume of trade in apples (by 46%) and poultry meat (by 33%) also decreased (Table 1).

Table 1. Dynamics of foreign trade turnover of agri-food products in Russia in 2013-2017, thousand tons.

| Name of products | 2013   | 2014   | 2015   | 2016   | 2017   | 2017 to 2013, at % |
|------------------|--------|--------|--------|--------|--------|-------------------|
| Wheat            | 14710  | 22536  | 21639  | 25907  | 33295  | 226,3             |
| Barley           | 2618   | 4178   | 5343   | 3021   | 4801   | 183,4             |
| Sunflower seeds  | 111    | 124    | 186    | 281    | 419    | 378,2             |
| Potatoes         | 489    | 728    | 713    | 507    | 750    | 153,5             |
| Apples           | 1353   | 1051   | 897    | 693    | 728    | 53,8              |
| Wheat flour      | 181    | 161    | 290    | 279    | 243    | 134,5             |
| Sunflower oil    | 1377   | 1678   | 1448   | 1796   | 2352   | 170,8             |
| Poultry meat     | 581    | 516    | 327    | 338    | 391    | 67,3              |
| Pork             | 620,1  | 372,6  | 308,9  | 277,4  | 308,5  | 49,8              |
| Sugar            | 618    | 1014   | 1018   | 647    | 820    | 132,7             |

Source: Rosstat [17].

The dynamics of foreign trade turnover is formed due to import and export operations, so simply an increase in foreign trade still does not indicate positive trends in the agricultural sector of Russia, it is necessary to determine the quality of this growth, which was due to the expansion of domestic exports.
or increased imports. In order to overcome the negative balance in the trade in food products and agricultural raw materials, the dynamics of exports and imports of agri-food products were analyzed.

Over the past 5 years, almost all types of products (except sunflower seeds, sunflower oil, potatoes) experienced a significant decrease in imports, the most significant decrease was recorded for wheat (70%), poultry meat and sugar (by 57%), pork (by 55%), apples (by 48%), which indicates high rates of import substitution for these types of products (Table 2).

| Name of products | 2013 | 2014 | 2015 | 2016 | 2017 | 2017 to 2013, at % |
|------------------|------|------|------|------|------|--------------------|
| Wheat            | 913,3| 396,9| 404,6| 579,9| 269  | 29,5               |
| Barley           | 292,8| 168,1| 47,9 | 158,4| 168,6| 57,6               |
| Wheat flour      | 64,6 | 35,5 | 25,3 | 41,9 | 41,2 | 63,8               |
| Sunflower seeds  | 30,5 | 33,3 | 125,5| 94   | 105,7| 346,6              |
| Sunflower oil    | 18,1 | 8,8  | 3,3  | 5,9  | 25,7 | 142,0              |
| Potatoes         | 448,2| 689,7| 549,2| 285,5| 563,5| 125,7              |
| Apples           | 1352,3| 1049,9| 891,7| 678,5| 710,3| 52,5               |
| Poultry meat     | 527  | 454,5| 255,2| 223,7| 227,5| 43,2               |
| Pork             | 619,8| 372,2| 304,5| 258,7| 281,2| 45,4               |
| Sugar            | 613  | 1007,4| 1010| 552,7| 266,3| 43,4               |

Source: Rosstat [17].

There was an increase in imports only for sunflower seeds, sunflower oil, potatoes. The most significant increase in imports was in sunflower seeds (3.5 times), which was due to the specialization of Russia (unlike, for example, from Kazakhstan) not for raw materials, but for the already processed seeds in the form of sunflower oil, which production volumes from 2013 to 2017 increased by more than 40%. The Russian Federation has significant capacities for the production of vegetable oils, and the raw material base is still lagging behind the needs of the oil and fat industry, respectively, imports increase.

The positive changes in the structure of Russia’s foreign trade were due to the financial and economic situation, which led to a devaluation of the national currency and a corresponding decrease in prices for domestic agri-food products in terms of US dollars. Thus, the price competitiveness of domestic products on world markets has significantly increased and, accordingly, the volume of export deliveries.

As the main types of prices, the study analyzed the average prices of agricultural producers (characterizing the competitiveness of products at the level of their production) and the average export prices (characterizing the competitiveness of agricultural products in the world market).

In order to identify price competitiveness, a comparative analysis of these prices in the Russian Federation and in the leading countries in the export of agri-food products in the world (TOP-5) was conducted.

5. Discussion

The analysis of the price situation in the agri-food market showed that the observed worldwide increase in prices in the period 2009-2013 was followed by a significant decrease in 2014-2016. A comparative analysis of the competitiveness of specific types of domestic agri-food products was carried out at producer prices (farm prices) and export prices.

For example, for wheat in the period 2014-2016, the largest decline in producer prices was observed in the USA (36%), Australia (28%), France and Russia (26%) (Figure 2). The same price
decline was observed for barley (by 31% in Germany and France, 22% in Australia, 20% in Russia, 18% in Ukraine) and chicken meat (47% in Brazil, 35% in Russia, and 28% in Poland).

Figure 2. Dynamics of average prices of wheat producers in Russia and in the countries-leaders in the export of these products in 2013-2016, US dollars per ton. Source: FAOSTAT [18].

The situation is somewhat different with respect to sunflower seeds, potatoes, and apples: not all countries experienced a decrease in prices for these products. Thus, for sunflower seeds, the largest decline in prices was observed in the United States (by 20%) and France (by 11%), while the prices rose by 9% in the Russian Federation over this period. Producer prices for potatoes in Russia fell by more than two times (by 55%), the decline in China was only 14%; while in France, Holland, and Germany, prices on the contrary increased by 67%, 40%, and 8% respectively. The largest decline in prices for apples was noted in China (by 27%) and France (by 2%), and the largest growth was in Russia (by 48%) and Chile (by 29%).

Among the leading countries in the world in terms of the export of wheat and barley, minimum prices for producers were formed in the Russian Federation and in Ukraine, which allowed our country to increase the export of these products more than doubled over the five-year period. In 2016, the average price of wheat producers in Russia was $132 per ton, $129 per ton in Ukraine; $115 per ton in Russia, $118 per ton in Ukraine. In Australia, the United States, and Canada, prices for the same period of time were at a higher level (Table 3).

By the end of 2017, the Russian Federation ranked only ninth in the list of leaders in terms of exports of sunflower seeds in the world (code TN VED 1206). At the same time, it had the most competitive average producer prices compared to the top five exporters. So, in 2016, the average price of sunflower seed producers in the Russian Federation amounted to $326 per ton. At a slightly higher level, they were formed in Romania, the USA, and Bulgaria.

Export of vegetable crops is still a small share in the total export of agricultural products of Russia. However, for example, the average prices of potato producers are the most competitive among the leading exporters of this type of product: in 2016, the average prices of potato producers in Russia were $153, which is lower than in Holland and Egypt.

The minimum prices of apple growers in the world in 2016 were noted in China ($468 per ton,) and the maximum in France ($675 per ton). The export volumes of this product by the Russian Federation are quite low, but the average prices producers were at the same level as in Italy, which ranks third in the world in terms of apple exports: $598 per ton and $597 per ton, respectively.

Analysis of the average export prices for food products revealed the main trends emerging on the world market in the period under review. As well as with average producer prices, average export prices for wheat (code TN VED 1001) and barley (code TN VED 1003) were at the minimum level in
Russia and Ukraine. The highest export prices for wheat were recorded in the USA and Australia, for barley – in Australia (Table 4).

Table 3. Comparison of average producer prices of agricultural products in Russia in 2013-2016 and in the leading countries in the export of these products.

| Name of products | Russian Federation | Average producer prices of the leading export countries in the world in 2016 |
|------------------|--------------------|--------------------------------------------------------------------------|
| Wheat            | 211 179 144 132    | Australia 206 Canada 174 France 160 Ukraine 129 USA 141                  |
| Barley           | 200 144 121 115    | Australia 188 Argentina 185 France 139 Germany 139 Ukraine 118           |
| Sunflower seeds  | 378 301 333 326    | Bulgaria 394 France 436 Romania 370 USA 384 China 180                   |
| Potatoes         | 297 336 217 153    | Egypt 188* France 405 Georgia 221 Holland 190 China 326                 |
| Apples           | 656 403 430 598    | Chile 650 France 675 Italy 597 USA 468                                 |

Source: FAOSTAT [18] (*2015).

Despite the significant progress made in the production and export of grain crops observed in recent years, the Russian Federation is not among the world leaders in the production and export of wheat flour (code TN VED 1101). However, the average export price for these products is quite competitive in the global market (US $318 per ton in 2017). The leader in terms of this indicator is Kazakhstan, where the average export price of flour in 2017 was $203 per ton. At a slightly higher level, there were prices in Argentina and Turkey: $280 per ton and $302 per ton, respectively.

Russia is one of the world leaders in the export of vegetable oil (code TN VED 1512), being second only to Ukraine in this indicator. At the same time, the average export price in Ukraine is slightly lower ($747 per ton) and in Russia ($765 per ton). Also, in Argentina there was a comparable level of $796 per ton. The highest prices are in Turkey ($1,021 per ton).

Despite the fact that the average export price of the Russian Federation for apples (code TN VED 0808 10) is at a fairly low level, disparate export volumes with leading countries do not yet allow to conclude that this type of product is competitive in the global market.

Table 4. Comparison of the average export prices of agri-food products in Russia and in the leading countries in the export of these products in 2017, US dollars / ton.

| Code TN VED | Name of products | Russia | World Exporters (TOP-5) |
|-------------|------------------|--------|--------------------------|
| 1001        | Wheat            | 175    | USA 224 Canada 229*       |
|             |                  |        | Australia 211 France 146  |
|             |                  |        | Ukraine 197 Argentina 178 |
| 1003        | Barley           | 158    | Australia 181            |
| 1101        | Wheat flour      | 318    | Turkey 302 Kazakhstan 203 |
|             |                  |        | Germany 353 Argentina 280 |
| 1206        | Sunflower seeds  | 418    | Turkey 1140 Bulgaria 559  |
|             |                  |        | China 1021 Belgium 350    |
| 1512        | Sunflower oil    | 765    | Ukraine 796 Argentina 747 |
|             |                  |        | Holland 969 Turkey 1021   |
| 0701        | Potatoes         | 126    | Holland 747 France 597    |
|             |                  |        | Germany 1021 China 912*   |
|             |                  |        | Hungary 2801 USA          |
In 2017, in Russia and the United States, the average export price for poultry meat (code TN VED 0207) was formed at the level of $1,059 per ton, which is the best indicator among the TOP-5 exporters in the world. However, at the same time, the volume of USA exports (3.4 million tons) is significantly higher than Russia’s exports (163 thousand tons).

Thus, among the products in question, the lowest prices in Russia were for producers of wheat, barley, sunflower seeds, and potatoes. Average export prices were competitive in virtually every type of product considered, which led to an increase in their exports.

In the period of 2013-2017, there was a significant increase in export deliveries for all the commodity items under review (Table 5). Exports of sunflower seeds and wheat flour increased by 70%, including 2.0 and 2.4 times for barley and wheat, respectively. Exports of poultry meat increased in 3 times, including almost in 4 times for sunflower oil, in more than 100 times for sugar. Import substitution has already been achieved for these products in Russia; and substantial export potential has already been formed. Also, one could find more on this topic in [21].

For such items as pork, apples, despite the low current export values, there was a tenfold increase in deliveries, due to the almost complete absence of exports of these products in 2013, which is a positive trend, indicating growth in production and the need to enter new markets.

6. Conclusion
Thus, the result of the import substitution policy pursued in recent years has been an increase in production and a reduction in imports for a variety of agri-food products, and the depreciation of the national currency has increased the price competitiveness of domestic agri-food products on the world market and, accordingly, led to a significant increase in export volumes.

Table 5. Dynamics of exports of agri-food products in 2013-2017, thousand tons.

| Code TN VED | Name products          | 2013  | 2014  | 2015  | 2016  | 2017  | 2017 to 2013, times |
|-------------|------------------------|-------|-------|-------|-------|-------|---------------------|
| 1001        | Wheat                  | 13796 | 22139 | 21234 | 25327 | 33026 | 2,4                 |
| 1003        | Barley                 | 2325  | 4010  | 5295  | 2863  | 4632  | 2,0                 |
| 1206        | Sunflower seeds        | 80    | 91    | 60    | 187   | 314   | 1,7                 |
| 0701        | Potatoes               | 40    | 38    | 164   | 221   | 187   | 4,6                 |
| 0808 10     | Apples                 | 1     | 1     | 5     | 14    | 18    | 30,9                |
| 1101        | Wheat flour            | 116   | 125   | 264   | 237   | 202   | 1,7                 |
| 1512        | Sunflower oil          | 1358  | 1669  | 1445  | 1790  | 2326  | 3,9                 |
| 0207        | Poultry meat           | 54    | 62    | 71    | 115   | 163   | 3,0                 |
| 0203        | Pork                   | 0,3   | 0,4   | 4,4   | 18,7  | 27,3  | 104,7               |
| 1701        | Sugar                  | 5     | 7     | 8     | 94    | 554   | 109,4               |

Source: Comtrade [20].
Taking into account the fact that the observed positive dynamics is due to the depreciation of the ruble and opportunistic factors, it appears that to systematically increase agricultural exports and increase the competitiveness of agri-food products on the foreign market requires the implementation of a whole range of measures. Such measures include creating a modern export infrastructure, including logistics centers, refrigerators, and higher port capacity; establishing an effective marketing system for branding and promotion of the Russian agri-food products; developing a coherent system of measures of state support for non-primary exports, which is currently a priority area; compliance with food safety standards of the country; improving business processes to optimize costs and reduce losses throughout the product chain through the use of innovative technologies, improving product quality.

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