

Impact of counter-sanctions on agricultural production in Russia

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Abstract. The problem of the effectiveness of the sanctions mechanism in the modern world is acute. Currently, Western countries have introduced six packages of sanctions against the Russian economy. However, not all types of sanctions are negative for Russian enterprises. Food counter-sanctions introduced by Russia in 2014 had a positive impact on agricultural production in the country. Thanks to them, to a large extent, it was possible to eliminate the negative consequences of the 1990s. in agriculture. The purpose of the study is to determine the impact of counter-sanctions on agricultural production in 2014-2019. As part of this work, it is necessary to solve the following tasks: - determine the change in the volume of agricultural production in 2014-2019 in the conditions of the Samara region; - to analyse the change in the system of state support for agricultural production; - to identify factors that affect the performance of agricultural producers. During the period of counter-sanctions (even with a decrease in the amount of state support), it was possible to increase crop yields, put unused arable land into circulation, and renew the machine and tractor fleet of agricultural enterprises).

1 Introduction

In 2014, after the events in Crimea, the United States and the countries of the European Union imposed sanctions against the Russian economy. In response, Russia imposed counter-sanctions against food supplies from these countries. The effect of this sanctions policy as a result turned out not to be negative for the agricultural sector of the EU countries, which in most cases quickly reoriented to other markets or found loopholes through other countries of the Eurasian Union (for example, Belarusian shrimp appeared, the name of which has become a household name), but positive for the agricultural sector of Russia economy [1-5].

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The reason for this effect was the situation in which Russian agricultural production had to work from 1990 to 2014. On the one hand, the drastic reform of agriculture led to its rapid destruction without the creation of a working alternative model, on the other hand, all this time there was strong pressure from subsidized imports. Dumping, European suppliers supplied products that, for some reason, could not be sold on the European market [6-9]. Additional incentives for the promotion of European and American food to the markets of developing countries were:

1) significant subsidy support from governments. In the early 2000s, the indicator of the level of support for agricultural producers (Producer Support Estimate - PSE), which includes all types of subventions, grants and other direct and indirect payments from public funds to help the agricultural sector, was in Switzerland and Japan (69% each), Norway (67%), South Korea (64%) and Iceland (59%). In the US, this figure was 21%, in the countries of the European Union - 45%. For comparison, in Russia it varied from 3 to 10%, despite the worst economic conditions [10-12];

2) a significant administrative resource. Through circles close to the Government of the Russian Federation, the agenda was promoted that agriculture is a "black hole", it is necessary to integrate into the world economy. Selling oil to buy food. At the same time, attempts to protect the domestic market were quite successfully blocked. For example, when in 2003 the question arose of restricting the import of pork (introducing quotas) in order to increase the competitiveness of domestic producers, the opposition was so great that they limited themselves to a half-hearted decision [13-15];

3) low purchasing power of the population. A sharp and significant drop in the income of the population of the Russian Federation led to the fact that it began to choose food products based not on their consumer properties, but primarily on price. For example, the so-called «Bush legs». As soon as consumers had the opportunity to choose, they almost immediately disappeared from the market [16].

Due to these and a number of other factors, in spite of the national project "Development of the Agro-Industrial Complex" being implemented since 2006, by 2014 the share of imported food in the Russian Federation was very significant.

The purpose of the study is to determine the impact of counter-sanctions on agricultural production in 2014-2019. As part of this work, it is necessary to solve the following tasks: - determine the change in the volume of agricultural production in 2014-2019 in the conditions of the Samara region; - to analyze the change in the system of state support for agricultural production; - to identify factors that affect the performance of agricultural producers.

2 Materials and methods

As part of the study, it is planned to study the trend in changes in the volume of production of basic agricultural products. To do this, it is planned to study the dynamics of indicators for 2000-2013 and 2014-2019.

In the future, we study data on the system of state support for agriculture in the region, the profitability of agricultural enterprises, and the income of the population.

In conclusion, it is necessary to identify the impact of state support, incomes of the population on changes in production volumes.

3 Results

The study was conducted in the conditions of the Samara region. The region is located in the European part of the Russian Federation. Its territory is distinguished by a sharply

continental climate and belongs to the zone of risky agriculture. The area of agricultural land is 4089 thousand hectares [17, 18].

As a result of the change in the economic structure, since 1991, agricultural production has been in a state of constant crisis. Formation in the 1990s the system of resellers, which cut off agricultural producers from the sale of products, led to an outflow of funds from agriculture. Often, agricultural enterprises were forced to sell products below cost. A gradual change in the situation has been observed since the beginning of the 2000s, especially after the start of the implementation of the National Project "Development of the Agro-Industrial Complex" in 2006. However, over the previous 15 years, the situation has deteriorated so much that only an increase in funding for the industry could not correct the situation. New approaches were required to protect the domestic market.

For agricultural enterprises of the Samara region, the introduction of counter-sanctions in 2014 was an unequivocal boon. Table 1 shows that although the first signs of improvement in the situation appeared in 2012-2013, they were unstable. After a profit of 2276 million rubles in 2012, in 2013 there is a decrease in the indicator to 1464 million rubles. And only, starting from 2014, the amount of profit begins to form in the range of 5.0-6.0 billion rubles / year. The observed slight deviations are more related to the formation of climatic conditions during the growing season than to the market situation.

Table 1. Financial results of agricultural enterprises of the Samara region.

| Year | 2000 | 2005 | 2010 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|------|------|------|------|------|------|------|------|------|------|------|
| The balanced financial result (profit minus loss) of the activities of organizations carrying out activities, million rubles: | 57 | -450 | -458 | 2276 | 1464 | 3491 | 5582 | 6261 | 4047 | 5937 | 5267 |
| in crop production | 128 | -576 | -68 | 1577 | 2131 | 3294 | 5365 | 6082 | 3803 | 6065 | 5343 |
| in animal husbandry | -40 | 123 | -347 | 608 | -996 | -5 | -278 | 75 | 277 | -116 | -93 |
| Share of profitable organizations as a percentage of the total number of organizations | 57.1 | 54.8 | 67.4 | 78.4 | 79.3 | 82.3 | 82.9 | 82.5 | 83.3 | 82.0 | 84.0 |
| amount of profit, million rubles | 568 | 701 | 1999 | 3651 | 4622 | 6533 | 8018 | 8824 | 5314 | 7439 | 6703 |
| Share of unprofitable organizations as a percentage of the total number of organizations | 42.9 | 45.2 | 32.6 | 21.6 | 20.7 | 17.7 | 17.1 | 17.5 | 16.7 | 18.0 | 16.0 |
| amount of loss, million rubles | 512 | 1151 | 2458 | 1375 | 3158 | 3043 | 2436 | 2563 | 1267 | 1503 | 1436 |
| Profitability of sold products (works, services), organizations carrying out activities, percent: | 2.8 | -1.1 | 5.0 | 12.9 | 13.2 | 17.5 | 29.5 | 29.0 | 21.8 | 21.1 | 21.2 |
| in crop production | 7.6 | -9.8 | 16.5 | 18.0 | 22.0 | 27.5 | 42.5 | 45.4 | 28.3 | 26.7 | 25.2 |
| in animal husbandry | -0.9 | 9.9 | -9.2 | 7.1 | 0.6 | 2.6 | 8.8 | 2.4 | 6.6 | 0.9 | 3.3 |

The situation is very different across industries. In crop production, the profitability of production is much higher than in animal husbandry. The difference lies in the fact that in crop production it was possible to form an equilibrium model of the relationship "agricultural production - processing industry - trade". Large agricultural producers have appeared in the industry (Bioton, Sinko, Vasilina, Zagotzerno), which can regulate the supply of goods on the market at a sufficient level, and also have the opportunity to export

products. Therefore, with the exception of 2010, when an extreme drought was observed in the region, the profitability of crop production is significant. As a result, agricultural production has recently been modernized (new equipment is being acquired, including foreign-made equipment, modern technologies are being used, including modern chemical agents, wages have increased significantly) [19-27].

In animal husbandry, the situation is completely different. Most milk producers could not survive during the difficult period. In 1990-2000 most of the old dairy farms have closed. Most milk processors have switched to using imported milk powder. Unfortunately, the situation cannot be changed even now. Restoration of dairy farms at the modern technological level is almost impossible today. In a more favorable situation were the regions that were able to maintain the livestock of the dairy herd (Tatarstan, Bashkiria, etc.) and now they have a base for the restoration of production and its development at the modern technological level [28, 29].

Due to the stable profitability of agricultural production, the share of profitable enterprises increased and became constant (82-84%). Of the unprofitable enterprises, most of them are newly formed enterprises that do not have the necessary competencies, the period of operation of which is limited to one to three years.

The profitability of sold products since 2014 does not fall below 20%. The main profitable products are agricultural crops (profitability from 25 to 45%), in animal husbandry the situation has slightly improved, but profitability remains minimal (from 0.9% in 2018 to 8.8% in 2015).

A significant consequence of the counter-sanctions was the almost complete introduction of fallow lands into agricultural circulation. In the middle of 2000 in the Samara region, the area of fallow lands (i.e., unused arable land) was about 500 thousand hectares, i.e. about 1/5 of all sown areas (Table 2). At the moment, the area of fallow lands has decreased by 10 times and is less than 50 thousand hectares. Further introduction into circulation of significant areas is hardly possible, since the remaining areas require significant costs for reclamation, restoration of fertility, uprooting of trees, etc.

Table 2. Cultivated areas of agricultural crops.

| Year | 1995 | 2000 | 2005 | 2010 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Sown area - total, thousand ha | 2414.8 | 1959.6 | 1874.2 | 1834.0 | 1789.5 | 1955.8 | 2003.8 | 2016.7 | 2046.9 | 2042.7 | 2096.7 | 2113.6 |

Table 3 shows that the increase in sown areas was accompanied by an increase in the gross grain harvest. Not taking into account the years with exceptionally favourable or unfavourable climatic conditions (2000, 2010, 2015 and 2017), it can be seen that the gross harvest has been demonstrating a steady positive trend since 2013-2014. If in 1990-2010 the usual level of gross harvest was 1.0-1.3 million tons, then starting from 2014 it was 1.8-2.0 million tons. For the most part, this was influenced not only by extensive factors (growth of sown areas), but also due to the stabilization of the profitability of agricultural producers - intensive ones (the use of modern varieties and high-quality seeds, adherence to technologies, extensive chemicalization, renewal of the machine and tractor fleet, etc.).

Table 3. Gross grain harvest.

| Year | 1995 | 2000 | 2005 | 2010 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------------------------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Harvested grain, thousand tons | 1264.5 | 1529.3 | 1101.8 | 489.2 | 1106.8 | 1629.4 | 2070.1 | 1332.8 | 2119.4 | 2750.8 | 1830.6 | 1892.6 |

The influence of these factors is reflected in the growth of crop yields. As can be seen from the data in Table 4, 2013-2014 are the boundary between the two periods: up to this time, the yield of almost all crops was significantly lower than in the subsequent period.

Table 4. Productivity of agricultural crops, cwt/ha.

| Year | 1995 | 2000 | 2005 | 2010 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Cereals and leguminous crops - total | 10.3 | 12.6 | 10.5 | 11.1 | 12.9 | 17.3 | 19.5 | 15.0 | 19.2 | 26.0 | 17.5 | 17.7 |
| winter wheat | 15.3 | 18.8 | 12.9 | 12.1 | 11.7 | 22.0 | 25.9 | 18.3 | 26.9 | 35.7 | 25.3 | 20.5 |
| spring wheat | 7.9 | 8.5 | 8.7 | 10.0 | 13.5 | 16.1 | 17.5 | 14.5 | 14.1 | 25.1 | 15.2 | 17.7 |
| winter rye | 15.0 | 16.1 | 11.4 | 10.5 | 15.1 | 20.8 | 21.3 | 14.7 | 18.3 | 26.3 | 17.3 | 13.0 |
| spring barley | 8.2 | 12.3 | 8.9 | 9.9 | 13.8 | 14.6 | 16.2 | 12.8 | 16.0 | 20.8 | 12.2 | 14.7 |
| oats | 9.4 | 14.2 | 10.5 | 8.5 | 13.4 | 14.2 | 16.9 | 12.6 | 15.2 | 20.4 | 11.4 | 14.1 |
| corn for grain | 22.7 | 5.2 | 19.9 | 23.8 | 34.9 | 38.1 | 34.1 | 31.3 | 33.7 | 29.9 | 32.9 | 32.5 |
| millet | 6.8 | 8.0 | 7.9 | 6.9 | 10.9 | 16.2 | 11.2 | 10.9 | 15.0 | 11.8 | 10.9 | 11.1 |
| Peas | 7.2 | 14.2 | 13.7 | 8.4 | 13.5 | 13.0 | 15.0 | 10.9 | 17.0 | 25.6 | 12.1 | 16.0 |
| Sunflower for grain | 6.4 | 7.1 | 8.1 | 6.8 | 11.5 | 14.1 | 11.2 | 11.1 | 12.9 | 12.4 | 15.7 | 16.7 |
| Soya | - | 4.0 | 8.2 | 5.3 | 11.0 | 13.2 | 12.2 | 11.5 | 14.2 | 13.2 | 17.0 | 17.6 |
| Potato | 75.8 | 89.2 | 141.0 | 87.8 | 155.8 | 163.2 | 165.6 | 161.3 | 172.1 | 175.9 | 162.3 | 183.5 |
| Outdoor vegetables | 110.0 | 140.7 | 272.4 | 148.9 | 262.1 | 255.4 | 263.0 | 257.4 | 279.3 | 249.0 | 281.0 | 289.0 |

The average yield of grain crops in the last seven years (2013-2019) has increased compared to the previous period by 65%, sunflower - by 68%, soybeans - twice, potatoes - by 54%, open ground vegetables - by 43%, peas - by 37%. The influence of climatic conditions is levelled out due to the analysis of a long period, therefore, it is possible to draw a conclusion about the influence of technological factors on the growth of productivity.

Table 5. Investments in fixed capital of agricultural enterprises.

| Year | 2000 | 2005 | 2010 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Investments in fixed capital, million rubles | 443.4 | 984.6 | 1956.0 | 1740.9 | 4496.8 | 5600.4 | 3929.7 | 3843.2 | 3230.7 | 2787.5 | 3043.0 |

In the same period, there is also an increase in investment in fixed assets of agricultural production (Table 5). If initially the growth was 2-3 times (in 2013-2014), then in the future, annual investments fluctuated around 3.0 billion rubles.

Table 6. Structure of investments in fixed capital of agricultural enterprises, million rubles.

| Year | 2000 | 2005 | 2010 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|--|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Investments in fixed capital - total | 443.4 | 984.6 | 1956.0 | 1740.9 | 4496.8 | 5600.4 | 3929.7 | 3843.2 | 3230.7 | 2787.5 | 3043.0 |
| own funds | 337.2 | 506.6 | 1052.6 | 1020.8 | 1586.9 | 2224.3 | 2122.7 | 2460.6 | 2436.2 | 1519.9 | 1637.2 |
| involved funds | 106.2 | 478.0 | 903.5 | 720.1 | 2909.9 | 3376.1 | 1807.0 | 1382.6 | 794.5 | 1267.6 | 1405.8 |
| budget resources | 69.9 | 285.9 | 134.0 | 275.7 | 255.4 | 201.7 | 297.2 | 169.9 | 37.7 | 28.7 | 155.6 |
| federal budget | 16.7 | 100.1 | 132.7 | 126.6 | 142.7 | 144.2 | 202.8 | 152.2 | 10.4 | 10.3 | 36.1 |
| budgets of Russian Federation subjects | 53.2 | 185.8 | 1.3 | 149.1 | 112.7 | 57.5 | 94.3 | 17.7 | 27.3 | 18.4 | 119.5 |

The decline in investment is directly related to the hosting of the 2018 FIFA World Cup matches in the Samara region. To develop the infrastructure that was involved in the championship, many budget items were sequestered, including support for agriculture. The reduction amounted to 6 billion roubles. up to 3.5 billion roubles. And, although formally budgetary funds (Table 6) occupy a small share in the amount of investments (no more than 5% in recent years), the decrease in state support also affects the amount of investment in fixed capital [30-33]. On the one hand, the tightening of legislation has led to the refusal to attract budget funds for the purchase of equipment, construction for agricultural enterprises (with the exception of state-owned ones) [34-40], on the other hand, significant amounts of subsidies allow them to be used, incl. for investment.

4 Conclusion

The sanctions policy used in international relations always has a negative impact on the development of trade, on international relations. At the same time, the counter-sanctions introduced in 2014 had an extremely positive impact on the agriculture of the Russian Federation. Introduced as a response to the reaction of European countries to the Crimean events, they allowed the development of agriculture in the Russian Federation, minimizing the negative impact of subsidized imports from Europe and America. The financial condition of the country does not allow providing its agricultural producers with the same level of support as the countries of Western Europe and the USA. At the same time, obligations under the WTO did not allow, under normal conditions, to introduce quantitative restrictions to protect domestic agricultural production. The reciprocal nature of the restrictions made it possible to circumvent these restrictions. As a result of this, for example, in the Samara region, agricultural production received an additional impetus for development. The industry becomes investment-attractive. The increase in the profitability of production has led to the modernization of equipment, the use of modern technologies (including resource- and moisture-saving ones), the introduction of new crops for the region (soybeans, mustard, chickpeas, etc.), highly productive varieties, and an increase in the degree of chemicalization of production.

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