Russian Market of Vegetables and Fruits: Current State, Dependence on Imports, Development Prospects in the Terms of Modern Globalization

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Abstract. The article analyzes the current state of the Russian market of vegetables and fruits as the most important segment of the food market, its dependence on imports, and the prospects for development in the context of modern globalization. The processes of globalization have an ambiguous impact on the world market of fruit and vegetable products, in particular on the formation of factors and trends in its development in modern conditions. As part of the globalization of international trade in food, including vegetables and fruits, there is an increasingly close interaction between the elements of the world food system and the strengthening of their mutual influence. All these aspects affect Russia’s interests in this market. The authors analyze: the dynamics of imports of vegetables and fruits both in value and in physical volume; the geographical structure of imports and the quality of the goods supplied by the main exporters; the influence of internal and external factors that affect domestic market of fruits and vegetables, their impact on the share of these products in the food basket of Russian citizens; the increasing importance of food security of the country in the terms of sanctions policy; the necessity and challenges of import substitution.

Keywords: Russian market of vegetables and fruits · Food security · Sanctions · Food basket · Import substitution

1 Introduction

According to FAO estimates, about a quarter of the world’s food is produced outside the country of origin. This is due to the fact that the ability to produce specific agricultural products depends on different climatic conditions, and no country in the world can provide itself with all types of vegetables and fruits. Moreover, the optimal conditions for obtaining each specific fruit and vegetable product, as a rule, have a relatively small number of countries. This encourages the active development of the international division of labor in agriculture, and consequently the development of world food trade. Because of its importance to people’s lives, all countries are involved in international food trade.
Global food trade reached $1.5 trillion in 2018. (WTO 2019) Fruit and vegetable products in the value structure of this market have the largest share – 17% and the second place in terms of tonnage-18%.

The globalization of the fruit and vegetable market, new technologies (in greenhouse vegetable growing and berry production, intensive gardening, mushroom cultivation), climate change, demographic growth, an increase in the share of the middle class, growing demand for a healthy lifestyle, all these factors, affect the level of consumption of fresh vegetables and fruits in all regions of the world.

At the same time, along with positive trends and factors, there are also negative ones: the decline in the global economy, the weakening of the role of the WTO, the obsolescence of existing value chains in the agro-industrial complex, including all stages from harvesting to processing and sale to the final consumer, the continuing volatility of world prices and exchange rates, uncertainty in international trade (the US and China trade wars, increased mutual protectionism of the US and the EU, Brexit), contribute to the spread of factors that limit the consumption of these important and useful for human food. A striking example at the moment is the coronavirus pandemic that take hold all countries of the world. The main exporting countries experienced a reduction in exports, while the main importing countries experienced a reduction in imports of fruits and vegetables. Developed countries, especially European countries, face with the problem of attracting foreign labor to this segment for harvesting. All countries without exception face with a reduction in business at all levels of catering, from cafes to elite restaurants, and as a result, there are reduced purchases of vegetables and fruits. Ordinary citizens, in connection with a decrease in income, are reviewing their food basket, reducing the consumption of fruit and vegetable products in it. In importing countries, such as Russia, due the fall in the exchange rate of the national currency, prices for these products have increased, which also has a negative impact on the market of vegetables and fruits.

It should be noted that in 2014, Russia found itself in a special situation. The sanctions directed against it and the subsequent food embargo have set the state the task of ensuring food security by building and strengthening the national food base. These same events have shown that food is used today as a method of conducting modern wars, an instrument of economic pressure and political deterrence (Tihomirova 2019).

In this regard, it is particularly relevant to study the condition of the domestic fruit and vegetable market in the context of globalization, and the possibility of import substitution of fruit and vegetable products in the domestic market.

2 Methodology

To achieve this goal, the authors relied on the works of Russian economists, experts in the field explore the food market, problems of food security, trends on the Russian fruit and vegetable market: Bashkatova (2019), Nemchinov (2018), Nikolaychuk (2016),
The methodological basis of the study was a combination of various widely used methods. The main research methods were the search, systematization, evaluation and structural and dynamic analysis of macroeconomic indicators that characterize the current state of the Russian market of vegetables and fruits, analysis of quantitative indicators of imports of fruit and vegetable products and its geographical and commodity structure. When identifying factors and trends in the development of the studied market, the method of statistical observation was used.

To conduct the research, the authors used statistical data from the international database of the WTO, FAO, and the Federal customs service of the Russian Federation.

3 Results

In 2019, according to Rosstat the average per capita consumption of fruits and vegetables in Russia was 74 kg for fruit and 104 kg for vegetables per person, with the norm of the Ministry of health of 100 kg and 140 kg, respectively (Bashkatova 2019).

At the same time, it should be noted uneven consumption by regions of Russia (kg/person) per capita. According to Rosstat, the Central Federal district remains the largest consumer of fruits and vegetables in 2018, with a share of 29.6% in physical terms. The second place with a share of 19.1% is held by the Volga Federal district, the third-by the southern Federal district (12.1%). Both climatic conditions and demographic indicators of these regions contribute to the formation of demand for these types of food. The lowest indicators were found in the Siberian and far Eastern regions (9.8% and 10.2%, respectively).

The main volume of the fruit market is represented by apples (about 76.9% in physical terms). They also account for a large share of the domestic crop (68.7%) of the total consumption of this fruit. This is due to the fact that Apple cultivation is possible in most of the territory of Russia. Other types of domestic fruit, such as cherry and plum are more sensitive to growing conditions, they only fit the climate of the southern regions of Russia (southern and North Caucasus Federal districts, primarily in the Krasnodar and Stavropol edges, the Rostov region and Crimea), so their share in the domestic market is not much more than half - 55.1% and 58%, respectively (IndexBox 2018) Other types of fruit are imported. In General, the share of imported products accounts for about 2/3 of the domestic fruit market.
As can be seen from the indicators presented in Fig. 1, bananas, tangerines, apples, oranges and grapes are the leaders in imports. They account for 70% of all imported fruit. The dynamics of fruit imports are illustrated below (see Table 1).

Table 1. Dynamics of fruits imports (2013–2019)

| Years | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|-------|------|------|------|------|------|------|------|
| Import thousand tons | 6412 | 5688 | 5125 | 4861 | 5612 | 5903 | 3245 |
| Cost (billion USD) | 6.42 | 5.48 | 3.97 | 3.82 | 4.69 | 5.08 | 2.97 |

Source: compiled from data Export and import of Russia by product and country/URL: https://ru-stat.com/date-M201801-201812/RU/import/world/0207; https://ru-stat.com/date-Y2018-2019/RU/import/world/0208

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These tables show a decrease, both in value and in physical terms, of fruit imports after 2013. This is due to the fact that in 2014, the Russian Government banned the import of fresh vegetables and fruits to our country from countries that imposed economic sanctions against Russian companies and citizens. As can be seen from the data, until 2019 there is an increase in deliveries. However, in 2013, imports were significantly higher, so we can talk not about growth, but about a partial recovery in volumes. In 2019, there was a sharp decline caused by falling oil prices, a reduction in foreign exchange earnings and a fall in the national currency.
The embargo imposed in 2014 also affected the change in the share of major importers in the Russian market (see Fig. 2).

Ecuador, Turkey, China, Egypt, Iran, Azerbaijan, Serbia, and Moldova have significantly increased their share due to the fact that EU countries, the United States, and others left Russian market, having joined the anti-Russian sanctions. New suppliers have also arrived: Costa Rica, Vietnam, Peru, Pakistan, India. Considering the structure of consumption of fruit and vegetable products by the Russian population, we need to pay attention to such a product as a berry, which accounts for 4.5% of the total consumption.

The main share of the berry market is hold by garden berries (up to 68%), while wild berries account for a smaller part. About 94% of the market for garden berries is made up of currants, strawberries and raspberries. Russian strawberries hold 10–15% of the market share, the rest of the berries come from Serbia, Turkey, as well as from the CIS countries – Azerbaijan, Armenia, Moldova (nart.ru 2019).

In the structure of consumption of fresh vegetables, fruits and berries on the market, a clear advantage belongs to fresh vegetables. In the structure of consumption in Russia, they account for about 83.8% of the total consumption of fruit and vegetable products. In General, the share of imported products accounts for about 1/3 of the domestic vegetable market. The greatest demand is for tomatoes, sweet peppers, potatoes, onions, garlic, etc. (see Fig. 3).
The main suppliers of vegetables to the Russian market are: China (22.3%); Azerbaijan (12.1%); Belarus (10.3%); Israel (9.6%); Egypt (9.3); Iran (8.4%), Morocco (7.3%); Turkey (5.4%); Uzbekistan (3.1%); Kazakhstan (1.6%) (Ru-stat2019).

The Netherlands (9.5%); Poland (8.6%); Spain (8.3%); Ukraine (2.9%), as well as Belgium, France, Italy, Lithuania and other countries lost their shares as a result of the sanctions. This factor also affected the volume of deliveries. In 2018, according to the Federal customs service, vegetable imports amounted to 1.85 billion dollars, showing a slight increase after the introduction of sanctions (see Table 2).

The result of suppliers leaving the EU countries was not only a reduction in the volume of deliveries, but also the quality of goods delivered. The Rosselkhoznadzor periodically imposes temporary restrictions on the import of fruit and vegetable products from Turkey, Egypt, Uzbekistan, and Belarus. This indicates a problem of systematic violation of international and Russian phytosanitary standards, which was excluded by the quality of fruits and vegetables from European countries with high requirements for all food categories.

**Table 2. Dynamics of vegetable imports (2013–2019)**

| Years | 2013 | 2014 | 2015  | 2016  | 2017  | 2018  | 2019  |
|-------|------|------|-------|-------|-------|-------|-------|
| Import thousand tons | 3000 | 3380 | 2618  | 1744  | 2484  | 2452  | 1641  |
| Cost (billion Us$)   | 2.89 | 2.96 | 1.91  | 1.36  | 1.8   | 1.85  | 1.32  |

Source: compiled from data Export and import of Russia by product and country/URL: https://ru-stat.com/date-M201801-201812/RU/import/world/0207; https://ru-stat.com/date-Y2018-2019/RU/import/world/0208

**Fig. 3.** Main types of imported vegetables in Russia (%) Source: compiled by the Export analytical center for agribusiness. About vegetables imports to Russia in 2012–2018. https://ab-centre.ru/news/ob-importe-fruktov-v-rossiyu-v-2012-2018-gg
It should be noted that in 2019, the total import of fresh vegetables and fruits decreased again – by 4% compared to 2018. Nevertheless, Russia remains the world’s third largest importer of fresh fruits and vegetables. The United States is in first place, and Germany is in second place (Fruitnews 2020).

In this regard, the issue of import substitution becomes particularly relevant. The embargo did not solve the problem of saturation of the market with domestic fruit and vegetable products. For example, apples, being the most common fruit grown in Russia, do not always meet the quality requirements of retail chains, and therefore are sold through unorganized market points. The peculiarity of Russian apples, as well as other fruits and vegetables, is that they are not stored for a long time: their main producers, small farms, cannot afford to build storage facilities, so domestic products are sold, as a rule, in the autumn-winter period, and the rest of the time the market is dominated by imports. For most other types of fruit, it can be argued that they will remain imported in greater volume and the saturation of the domestic market will occur at the place of harvest.

In the vegetable segment of the market, tomatoes remain the dominant import item, as well as potatoes and onions. The climatic conditions of the Russian Federation do not allow growing certain types of vegetables in an amount that satisfies the domestic market. As an alternative, it can and should be the development of greenhouse production, which currently covers the needs of the domestic market by no more than 10%. In this regard, greenhouse production is currently one of the priorities of the state policy in the framework of import substitution, and involves the implementation of a set of measures to support this sector of agribusiness, in particular, it provides compensation for up to 20–25% of the costs of construction or modernization of such farms. According to the agricultural Department, in 2015–2017, 56 investment projects were selected for the payment of this subsidy, the amount of investment in which amounted to 69 billion rubles. In addition, since 2017, farmers can receive preferential loans for the construction and modernization of greenhouse complexes at a rate not higher than 5% per annum (Nemchinov 2018).

At the same time, according to the expert’s assessment, we should not expect a complete replacement of foreign greenhouse vegetables with Russian products in the coming years, because for some items, such as sweet peppers, eggplants and zucchini, for which domestic enterprises have not been able to increase the volume of cultivation, a high share of imports in non-seasonal periods will remain.

Thus, a high share of imports will remain for certain types of fruits and vegetables, including those that can almost completely meet the needs of the domestic market.

At the same time, by now the mass market is changing in the direction of reducing its volumes. The economic problems in Russia facilitate this process, which resulted in a decrease in income of the population, a fall in the exchange rate of the national currency, which caused an increase in prices for imported products. People began to eat fruits and vegetables more often, but in smaller quantities.

4 Conclusions

The Russian market of vegetables and fruits remains import-dependent.
Import substitution became particularly relevant after the Decree of the Russian President “About the application of certain special economic measures to ensure the security of the Russian Federation” of August 6, 2014. As a response to anti-Russian sanctions, the food embargo has become an opportunity for domestic producers to fill the vacant niche with goods of domestic production. Some types of imported food, such as meat and meat products, are subject to import substitution, while others, such as vegetables and fruits, are simply reoriented from one supplier country to another. At the same time, the quality of imported goods has decreased and logistics costs have increased. European fruit and vegetable products that were banned were replaced by products from China, Turkey, Egypt, Morocco, Pakistan, Argentina, Chile, South Africa and a number of other countries that are currently increasing supplies.

According to the analysis, the share of imported fruit and vegetable products in the fruit segment is 2/3, in the vegetable segment holds 1/3 of the domestic market. A striking example of this is the Moscow food market, which receives more than 30% of vegetables and fruits from all imports of these products to the Russian Federation. In this regard, there is a problem of competition with imported products. Many fruits and vegetables of domestic origin do not meet the requirements of the high-quality segment of the market.

It should be noted that the physical availability of food at this scale of our country does not mean that it is available throughout its territory equally, given the large stratification of the population by income level. Even with a satisfactory level of saturation of the market with vegetables and fruits, there are periodically situations of short-term shortages of various types of vegetables in certain regions, as well as unjustified price increases. And this is not all the difficulties associated with moving across the territory of Russia. Even if the products are delivered, the existing level of infrastructure of the food market and high barriers to access to it do not allow domestic producers to occupy their niche (Nikolaychuk 2016).

The peculiarity of the fruit and vegetable trade is the necessity to create appropriate storage conditions: each type of fruit and vegetables must be in its own temperature regime, some fruits and vegetables cannot be adjacent to each other. This is directly related not only to the storage conditions, but also to the conditions of carriage. The availability of modern refrigerated vehicles is also a necessary and essential condition for the successful development of the fruit and vegetable sector.

For the successful development of vegetables and fruits market, it is necessary to increase the income of the population and the availability of these products for buyers. The current situation clearly demonstrates this correlation. In 2019, economic problems, including the fall in the ruble exchange rate, led to a reduction in income and a decrease in the purchasing power of the population, and as a result - a reduction in the share of fruits and vegetables in the consumption of ordinary citizens. This year (2020) due to the outbreak of pandemic coronavirus and isolation mode caused the closure the food service industry (eateries, cafes, bars, restaurants) that put in the most difficult conditions of survival as all the catering and grocery business, including fruits and vegetables.

Fruit imports to Russia (with the corresponding purchasing power of the population) will always be at a high level. Import substitution is possible only for the country’s traditional types of fruit and only during the harvest season.
The possibility of import substitution in the vegetable segment is associated with the development of greenhouse production, which began to show activity only recently. However, in order to use it to displace imported goods in the near future, we need new large-scale projects with greater dynamics of increasing production capacity, creating vegetable storage facilities, etc., as well as technological and financial support from the state.

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