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REVIEW ARTICLE

Restoration and Growth of the Russian Sugar Market

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Abstract The Russian Federation represents a very important stakeholder in the area of sugar beet production and consumption in Europe and Central Asia. The Russian population annually consumes over 5.9 million tonnes of pure sugar. After a long period of stagnation in the Russian sugar industry, the Russian Federation is now aiming to restore production capacities in the areas of both sugar beet growing and sugar production. The ambitious government programme has supported the growth of production potential. The government's goal is to reduce Russian dependence on imports of sugar, especially white sugar. During the period 1992–2000, there was a fall in Russia's own cultivation as well as processing capacities, competitiveness decreased, and dependence on imports increased significantly. By contrast, the period 2000–2014 was a resuscitation of the Russian market and economy. This was reflected in an increase in sugar beet production as well as growth in sugar production. Russia's dependence on imports of sugar from abroad dropped considerably and changed the structure of traded goods containing sugar. This review highlights the most significant trends that have influenced the development of the Russian sugar beet industry and the current trade, in particular.

Keywords Russia · Sugar market · Sugar beet · Sugar industry · Sugar production · Trade · Competitiveness

Introduction

The Russian Federation is a unique phenomenon on the European and world markets for sugar and sugar-producing crops-especially sugar beets. After a long period of stagnation in the Russian sugar industry, the Russian sugar market has stabilized (Rylko 2008) and is gradually taking the Russian Federation to the forefront of producers of sugar beets and beet sugar worldwide. Very dynamic growth has been recorded in recent years, mainly in the production of sugar beets and, subsequently, also in the production of both raw and refined sugar. Despite the reasonably good sugar harvest in 2014/15, the 4.5M. tonnes of domestic production cannot fully cover Russia's domestic consumption of sugar. Currently, Russia is the world's fifth largest consumer of sugar after India, China, Brazil and the United States (Anonymous 2015).

Production growth has logically also been reflected in the strengthening position of the Russian sugar industry, both domestically and on the regional market (the European market, the Asian market and especially the market of the CIS countries) (Ivanov 2011). In this respect, the Russian market itself is a very important sugar outlet because about 140 million Russians consume an annual average of about 40 kg of sugar each (Anonymous 2014).

Current Russian government policy is focused on protecting its agricultural market and supporting primarily domestic production growth. The result of policy developments over the last 10 years is constantly increasing level of Russian sugar market self-sufficiency (Anonymous 2015).

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The article analyzes the development of selected characteristics of the Russian sugar industry, with an emphasis on the period 1992–2014. The aim is to evaluate general trends and define the further advance of the Russian sugar market, with an emphasis on identifying progress in the area of comparative advantages, in relation to both global and regional markets as well as to Russia's most important trade partners.

With regard to the development of sugar beet production, yields per hectare, harvest areas, sugar contents and total volume of production is very important. The actual production of sugar is analyzed separately. Individual characteristics related to the development and production of beet sugar and sugar as such are compared with the European and world averages, in order to better illustrate the development of the Russian sugar market.

The subject of the study is the period 2000–2014 (the reduced monitored period is the result of limited data availability, especially for the period of the 1990s).

The analysis of foreign trade is elaborated at two levels: the commodity and the territorial. The analysis of the commodity structure of trade studies trading within the HS 17 aggregation-sugar and confectionery (i.e. sugar and products containing sugar); subsequently, the development of trade carried out within the framework of the HS 1701 aggregation, which includes trade in refined and raw sugar, is analyzed.

The development of the achieved values and volumes of exports and imports in relation to individual countries and territories is analyzed. The selected territories include the Asian, Latin American, North American, European and Oceania markets, as well as the markets of the EU and CIS countries. The analysis is also aimed at identifying the current most important trading partners (individual countries) in terms of both exports and imports.

Russian Sugar Market Development

Over the last 20 years, there have been considerable changes in the area of sugar beet and sugar production (Table 1). In the 1990s-i.e. the period of transformation of the Russian economy-there was a very significant reduction in sugar beet production, caused mainly by the collapse of sugar-processing facilities and declines in harvested areas and yields per hectare. The transformation period presented a real shock for the Russian economy and agriculture, including the sugar industry (Liefert 2012). The national economy significantly weakened (Sapir 2001; Robinson 1999), and this decrease also affected the purchasing power of companies, and individual consumers.

Between 1990 and 1999, the share of sugar-beet-growing areas in total beet-growing areas, in the world and particularly in Europe, fell from 17 to 10 %, and from about 23–12 %, respectively. In addition, average yields per hectare decreased from approximately 18–15 tonnes. Average hectare yields dropped to the level of 40 % of the average hectare yields worldwide, and also in Europe. It is worth emphasizing Europe's position as the most important centre of sugar beet production and, subsequently, beet sugar in the world.

The decrease in harvested areas and yields per hectare which occurred during the transformation period was logically reflected in decline of total sugar beet production. During the years 1992–1998, production decreased from 25.5 million tonnes to about 10.8 million tonnes. Russia's share in global and European production fell from about 9–4 %, and from 12.5 to 6 %, respectively.

It should be noted that in the above-mentioned period, Russian sugar beet production was declining by an average of 14 % per year, which was considerably higher compared with the general decline in the production volume of sugar beets which occurred globally (1.1 % annually) and, Europe in particular (2.5 % per year). This development illustrates the general devastating impact of the transformation of Russia's economy (Sanchez and Garcia 2008).

There was also a decline in the value of gross sugar beet production. When this decrease is compared to the fall in the value of production in the world and then in Europe, a significant drop can once again be seen on the part of Russia as a result of the transformation (Zaghini 2005).

Production of Sugar Beets and Sugar During the Period of Stabilization and Growth

The period of 2000–2014 in the Russian economy can be assessed relatively positively. After a phase of very wild transformation (Rutland 2013), there was a gradual

Table 1 An overview of Russian sugar beet production

	1992	1996	1998	2000	2004	2008	2010	2012	2014	2015*
Harvested areas of sugar beet (in ths. ha)	1439	1060	707	747	790	800	924	1102	906	930
Sugar beet hectare yields (in tonnes/ha)	17.76	15.25	15.27	18.82	27.65	36.25	24.09	40.89	43.4	40.0
Sugar beet production volume (in millions of tonnes)	25.5	16.2	10.8	14.1	21.8	29.0	22.3	45.1	39.3	36.0

Source Faostat, F.O. Licht, US GAINS, 2015

* Estimate

stabilization of the economy (Hanson 2007) and individual sectors of the national economy began to gradually consolidate. This consolidation was evident even in the sugar industry (Table 2). The volume of sugar beet production-and hence that of sugar-increased dramatically. Harvested areas and, in particular, average yields per hectare recorded a very significant change.

A comment can be made in this regard that the volume of harvested areas has increased from about 700 thousand to more than 1.1 million hectare (in 2012)-and thus Russia's share in global and European sugar beet crop areas has increased to 22 and 32 %, respectively. Despite the growth in harvested areas in the period between 2000 and 2012, the development trend of current harvested areas is negative. This is due to the limited ability of the Russian sugar industry to process the growing volume of beets. The reduction in harvested areas is offset by the growth in beet yields per hectare. Average yields per hectare recorded an almost miraculous increase from about 15 tonnes/hectare to more than 43 tonnes/hectare in 2014 (Smutka et al. 2014).

To explain the changes in yields per hectare, it is necessary to highlight the following facts. Beet producers have changed radically over the past decade. Following the privatization of state and collective farms in the early 1990s, beets suppliers became independent producers, the vast majority of which were newly created joint stock (corporate) farms. However, the transition period that followed privatization posed huge challenges for the farming sector and for beet farmers in particular. Quality seeds, fertilizers and plant protection chemicals were either in limited supply or farmers could not buy them. A change in production and especially yields/hectare began in the late 1990s. Growth in gross yields/hectare was achieved at the expense of an increase in productivity, the use of high-quality seeds, and the use of fertilizers and means of protection (Anonymous 2013). High-quality seeds, in particular, are very important for the successful growth of sugar beet production performance. According to Agriculture Minister Nikolay Fedorov, Russia imported 3300 tonnes of sugar beet seeds worth 83.6 mil. USD in 2014. Since the total volume of sugar beet seeds sown in 2014 was 3600 tonnes, this means a 92 % dependence on imports (Anonymous 2015).

In terms of average hectare yield, Russia had achieved about 75 % of the world and European average. Russian beet production in this second stage of development had achieved significantly better results than was the case in the development of global and European production.

Table 2 An overview of Russian sugar market

Russia	2000/2001 2000/2012 (in ths. tonnes)	2002/2001 2002/2012	2004/2001 2004/2012	2006/2001 2006/2012	2008/2001 2008/2012	2010/2001 2010/2012	2012/2001 2012/2012	2014/2001 2014/2012
Initial stocks								
Sugar	2367.8	2835.7	3259.8	2806.3	3609.5	2848.4	3930.9	3823.7
Production								
Sugar	1744.2	1756.8	2507.5	3499.1	3831.3	2996.2	5184.2	4820.8
Imports								
Sugar	4940.7	4650.2	3858.6	3509.5	2599.7	2384.1	852.1	1032.4
Sugar, raw	4684.2	4496.1	3486.4	3257.1	2417.7	2072.6	519.3	666.2
Sugar, white	256.4	154.1	372.2	252.5	182	311.5	332.8	366.2
Consumption								
Sugar	6444.4	6538.9	6454.5	6353.2	6107.5	5885.2	5868.2	5870
Exports								
Sugar	157.7	232.6	133.1	179	58.2	29.6	97.9	7.1
Sugar, raw	1.7	0.1	–	–	–	–	0.2	0.3
Sugar, white	156	232.6	133.1	179	58.2	29.6	97.7	6.8
Ending stocks								
Sugar	2450.6	2471.2	3038.2	3282.8	3874.8	2314	4001.2	3799.8
Net imports								
Sugar	4782.9	4417.6	3725.5	3330.5	2541.5	2354.6	754.2	1025.3
Sugar, raw	4682.5	4496	3486.4	3257.1	2417.6	2072.6	519.1	665.9
Sugar, white	100.4	–	239.1	73.5	123.8	282	235.1	359.4

Source Faostat, F.O. Licht, US GAINS, 2015

Russian production and yields per hectare grew on average by 3 and 7 % per year, respectively. The average weight of one root increased to about 511 grams in 2012/2013, and its sugar content at harvest currently ranges between 15 and 17 %.

Sugar beet production is done in a number of regions of the Russian Federation. The most important regions in terms of production include the "Central Federal Section" (55.7 % of harvested areas) and the Belgorod (7.4 %), Voronezh (10.9 %), Kursk (11 %), Lipetsk (9.6 %), Orel (5.4 %) and Tambov (9.4 %) regions. Other very important regions are the "Southern Federal District", which accounts for 16.8 % of total harvested areas (the flagship is the Krasnodar region—15 % of the total available harvested areas), "North Caucasus Federal District" (4.6 % of harvested areas), "Volga District" (21.1 % of the total harvested areas) and "Siberian Federal District" (1.9 % of the total harvested areas). The highest harvest yields come from the "Central Federal District"—where the average yields per hectare reached approximately 40 tonnes in the 2013/2014 period.

With regard to the production of sugar beets, it is worth highlighting the high production potential available to the Russian Federation (Azrilevich and Gudoshnikov 1999). Further production growth is, however, limited by insufficient refinery capacity. Low capacities for storage as well as the primary processing of sugar beets are also weak points. Approximately 15–20 % of the Russian production of harvested beets is destroyed due to poor storage conditions (Sergeev et al. 1997).

Another factor which influences the market situation for sugar beets in the Russian Federation is the rise in sugar beet prices; however, this price increase does not restrain the consumption of sugar. The rising prices make the beet production business increasingly lucrative. In the years 1999–2014 alone there was a more than threefold increase in the price of one tonne of sugar beets (from RUB 400 to about 1600 RUB, i.e. from 14 to about 51 USD).

The volume of investments flowing into the sugar industry multiplied when the Russian government launched the "State program of support for sugar beet and sugar production". On the basis of this project, an investment worth 4.5 billion rubles in 2011 alone supported further growth in the analyzed sector. Furthermore, more than 1 billion rubles was released directly from state resources, with the aim of supporting more than a dozen projects to build new capacity and, in particular, to reconstruct existing capacity. In this regard, it is important to highlight the government support for investments in constructing buildings to be used for seed production.

At present, sugar production and processing are carried out in 75 sugar mills. Despite the inclement weather, agricultural producers and processors have both managed to achieve quite good results. The high sugar content of the beets and the low losses in storage and processing compensated for the decrease in the gross volume of the beet harvest in 2014. Thus, according to data collected by Soyuzrossakhar, the sugar content of the beets at the point of delivery stood at 17.8 % (in comparison to 15.69 % a year ago), the total loss of sugar in processing was 2.7 % (in comparison to last year's 2.72 %), and the sugar yield came to 15.1 % (against 12.97 %). The increase in sugar yield was made possible by shortening the time the beets spend in storage (the processors worked very efficiently: operations were launched early and continued without interruption), by the lower temperatures during the beet storage period (November–December), by the ongoing gradual modernization of the sugar factories, and by the wider utilization of modern agricultural machinery. Thus, despite the adverse weather conditions during the beet growing season, industrial yields grew by 3.1 % from the previous season and reached a record level approaching 5 tonnes of sugar per ha. (Anonymous 2015).

According to Soyuzrossakhar, the Russian association of sugar processors and traders, the number of sugar refining plants that processed sugar beets in 2014/15 decreased to 71, from 78 plants last year. Those 71 plants are located in the major growing areas and have been upgraded with modern equipment. As of mid-September, 61 plants have already started processing sugar beets:

- In the Central Federal District, there are 41 plants (in 2013, 44 plants were functional), of which 36 began processing sugar beets;
- In the Southern Federal District, all 13 plants (15 plants in 2013) were working;
- In the North Caucasus Federal District, there are three plants, of which two were working by mid-September;
- In the Volga Valley Federal District, nine out of 13 plants (15 plants in 2013) started working by mid-September (or since the beginning of the harvest), and as of mid-September the plants have stored over 7 megatonnes of raw beets, 17 % more than on the same date last year, and processed 830,000 tonnes of sugar, 39 percent more than last year. However, given the smaller beet crop and the early start of its processing, the processing of beets is likely to finish earlier than last year. Imports of raw cane sugar may also begin early (Anonymous 2015).

Sugar production in the Russian Federation increased considerably in the post-transformation period. However, it must be pointed out that a very large proportion of the resulting output was contributed by sugar cane—which is imported unprocessed on a large scale into Russia where it is subsequently refined (Gudoshnikov 2008). During the period 1999–2014, Russian production of sugar rose from

about 1.4 million tonnes to more than 5.9 million tonnes. There was very significant growth within the monitored period-8–9 % per year-which exceeded the growth rate of sugar production in the world (2 % per year), and especially in Europe (1 % per year). Russia's share in worldwide sugar production (including cane sugar) thus grew from 1 % to almost 3 %. Its share in European production increased even more significantly-from 5 % to more than 15–18 %.

Cost of Sugar Production

According F.O. Licht, in 2014 the average cost of producing one tonne of sugar grew to 27,500 RUB/tonne, compared to 24,600 RUB/tonne in the previous year. The absence of new investments required for further modernization and diversification makes it hard to achieve the strategic goals of all-round improvements in efficiency and the lowering of production costs within the sugar industry. In the long term, this may once again make the Russian market hostage to the unstable and unpredictable global market (2015).

The ruble's weakness and the expected economy crisis could adversely affect Russia's beet sugar production and its costs. The sharp depreciation of the ruble against the US dollar is expected to lead to growth, in costs per hectare for the coming season. The cost of imported equipment and components for beet sugar factories has also increased significantly (Gudoshnikov 2009, 2015). According to industry data, there has been an increase in interest rates on current credit agreements: from 13–16 % to 28–35 % per year. This has brought about a corresponding increase in the price of both beets and sugar (Gudoshnikov 2015).

Who is Taking Control of Russian Sugar Production Capacity?

The beet sugar production sector is already comparatively well concentrated and, in terms of factory ownership, its concentration has been ongoing. In 2014 the share of the five leading companies (Prodimex (22 %), Dominant (15 %), Rusagro (12 %), Razgulay (8 %) and Sucden (6 %)) increased further to 63 %, as compared to 60 % in the previous season (Gudoshnikov 2015).

The sugar production and sugar beet processing capacity of Russian sugar companies have been constantly increasing (Table 3). In the period 2000–2015, annual crush capacity increased from 26.6 million tonnes to more than 44 million tonnes. The daily crush has also significantly increased, from 221,500 to 368,000 tonnes/day. There are more than eighty sugar plants in Russia, but only about seventy are really active. Supplementary Table 1 provides an overview of individual Russian sugar-producing companies and their capacities. Processing capacities are controlled primarily by the above-mentioned companies (Prodimex (19.6 %), Dominant (11.5 %), Razgulay (10.3 %), Rusagro (8.6 %) and Sucden (5.7 %)). These companies are taking control over more than 40 sugar plants, representing about 56 % of installed sugar beet processing capacity.

The processing capacities of Russian sugar plants have been constantly increasing since 2000. In the period 2000–2015, available processing capacity increased by 66 %. All the primary actors in the Russian market increased their processing capacities. According to available information related to development of the Russian sugar industry, future processing capacity growth is expected.

An important factor that has influenced the development of the Russian sugar market is high prices, which have had a relatively low impact on consumption. The rise of prices make the business of sugar production very lucrative (Table 4). In the years 2000–2014, the price of one kilogram of sugar increased more than threefold (from 0.45 to 1.13 USD). In this respect, the Russian market is characterized by a significant difference between average retail and wholesale sugar prices. For example, the wholesale price of one kilogram of sugar averaged about 0.80 USD, while the average retail price ranged around the above-mentioned level of 1.13 USD.

Table 3 Development of Russian sugar beet processing capacity in thousands of tonnes

Annual crush	Capacity	Daily crash	Capacity
2000	26 587 200	2000	221 560
2001	26 587 200	2001	221 560
2002	27 127 200	2002	226 060
2003	27 780 000	2003	231 500
2004	28 440 000	2004	237 000
2005	29 772 000	2005	248 100
2006	31 518 000	2006	262 650
2007	33 405 600	2007	278 380
2008	34 436 400	2008	286 970
2009	36 591 600	2009	304 930
2010	37 443 600	2010	312 030
2011	38 168 400	2011	318 070
2012	39 201 600	2012	326 680
2013	40 551 600	2013	337 930
2014	43 059 600	2014	358 830
2015	44 151 600	2015	367 930

Source F.O. Licht, 2015

Table 4 Development of white sugar retail prices on the Russian Federation market

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Price USD/kg	0.55	0.51	0.62	0.60	0.69	0.70	0.83	0.84	0.93	1.05	1.34	1.03	1.13	1.06	1.1

Source Rosstat, 2014

Development of Russian Foreign Trade in Sugar and Products Containing Sugar

Despite the extensive production capacity which the Russian Federation has at its disposal for sugar production, it has been unable to ensure complete self-sufficiency (Gudoshnikov 2008) in sugar consumption. In the Russian Federation, the balance of foreign trade (Table 5) in raw sugar and products containing sugar continuously reflects deficit.

The values of sales made within the framework of the HS 17 commodity aggregation-sugar and sweets-were characterized, especially in the 1990s, by a sharp decline in the value of exports and conversely, a very dynamic growth in the value of imports. The worst situation in this regard occurred in 1998, when Russian exports achieved within the above-mentioned aggregation earned only about 45 million USD and, conversely, imports ranged between 1.3 and 1.4 billion USD.

An important turning point in the development of the foreign trade value came during the period of 2000–2012. The export position was successfully strengthened, particularly in relation to the CIS countries. With regards to fluctuations in the value of foreign trade within the HS 17 aggregation, it can be stated that throughout the monitored period a positive trend had prevailed in the area of growth in the value of export proceeds. By contrast, imports in the monitored period can be characterized by a gradual decline in the achieved value.

Sugar plays a key role in the transactions conducted within the HS 17 aggregation—in both its refined and raw forms. Whereas the share of refined sugar is overwhelmingly predominant when compared to raw sugar in the case of exports of sugar, raw sugar dominates refined sugar in the case of imports.

It should be emphasized that the majority of raw sugar imports are not from beets but rather from sugarcane, imported mainly from Latin America and Southeast Asia (which are the largest producers of sugarcane in the world for further processing in refineries located within the territory of the Russian Federation (Gudoshnikov 2001). It is also important to mention the importance of raw sugarcane imports, particularly as they improve the productivity of Russian sugar factories, which are now able to process raw cane sugar even when seasonally grown sugar beets are not available.

As the Russian market gradually evolves, it also progressively transforms. During the 1990s, sugar (in both its refined or raw state) contributed anywhere from 71 to 90 % to total exports and imports. In the last few years there has been a massive transformation in the sugar market, and the share of pure sugar trade in total trade in sugar and sugar confectionery has decreased (Table 6).

With respect to exports, the share of sugar in the resulting value achieved within the HS 17 aggregation declined to about 1.7 %, whereas in the case of imports there was a decline of about 50 %. Thus it can be concluded that the Russian export market has become more focused on exports with a higher added value, with an emphasis on sweets. By contrast, there was a decline in the growth of imports of raw sugar. This was primarily due to less dependence on sugar imports during the 1990s, when Russian production capacity of sugar beet cultivation, as well as sugar crop processing began to increase significantly.

Table 7 shows a significant reduction in sugar imports, at the level of achieved value as well as in volume. There was a marked drop in the development of the trade deficit balance. The period that was analysed can be summarized in terms of the development of the value of the average rate of growth, both on the export and import side.

The average annual growth rate of the value and volume of exports reached a level of 7 % (3.1 % in the case of imports) and there was a decline in the growth rate of the

Table 5 Development of the value of Russian foreign trade achieved within the HS17 aggregation—sugar and sweets

17	1996	1998	2000	2002	2004	2006	2008	2009	2010	2012	2013
Export in mil. USD	141.0	44.7	63.6	78.5	78.8	124.6	137.5	135.7	97.6	278.3	274.8
Import in mil. USD	1447.6	1333.8	895.4	997.3	727.0	1279.1	1228.9	777.9	1505.6	667.2	656.7
Balance in mil. USD	−1306.6	−1289.1	−831.8	−918.8	−648.2	−1154.4	−1091.4	−642.2	−1408.0	−388.9	−381.9

Source UN Comtrade, 2014

Table 6 Proportion of sugar (HS1701 aggregation) in total foreign trade achieved within the HS17 aggregation

	1996 (%)	1998 (%)	2000 (%)	2002 (%)	2004 (%)	2006 (%)	2008 (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)
Share of sugar in total export of sweets	71.10	42.07	59.41	62.76	42.06	59.52	18.42	10.74	30.65	17.47	1.7
Share of sugar in total import of sweets	88.14	90.73	85.51	89.55	83.90	87.46	79.26	81.94	84.95	52.32	49.9

Source Faostat, 2014

Table 7 The development of Russian foreign trade conducted within the HS 1701aggregation

	1996	1998	2000	2002	2004	2006	2008	2010	2012	2013
Export mil. USD	100.3	18.8	37.8	49.3	33.1	74.2	25.3	10.5	48.6	4.916
Export in ths. tonnes	225.1	44.4	155.3	214.0	121.3	167.5	53.5	15.5	67.9	5.1
Import mil. USD	1275.9	1210.2	765.7	893.1	610.0	1118.7	974.0	1233.7	349.1	308.25
Import in ths. tonnes	3149.5	4060.2	4821.0	4604.4	2783.2	2743.4	2485.0	2184.8	590.9	612.1
Balance in mil. USD	−1175.6	−1191.4	−727.9	−843.8	−576.8	−1044.5	−948.7	−1223.2	−300.5	−303.3
Balance in ths. tonnes	−2924.4	−4015.8	−4665.6	−4390.4	−2661.9	−2575.9	−2431.5	−2169.3	−523.0	−607.0

Source F1aostat, 2014

achieved value and volume by an average of 8.5 and 12.9 %, respectively. This development had a very positive impact on the situation, especially in the area of foreign trade balance, where the value of the negative balance in the monitored period tended to gradually decline (by about 10 % per year). The volume of the negative balance also had a tendency to decline (approximately 13.5 % in 1 year).

However, when we consider the developments in the value and volume of foreign trade in sugar in the Russian Federation, it should be noted that the achieved values tend to fluctuate dramatically over time. This is mainly due to the fact that during this transitionary period, the Russian sugar market was very volatile. Its gradual stabilization has been assisted by recent measures implemented by the Russian government, which has defined very ambitious plans related to the Russian market reaching the level of self-sufficiency.

Under these plans, the Russian market was to achieve a minimum level of self-sufficiency. This minimum level was set 80 % or higher, in basic commodities, including sugar and sugar beets. Achieving this goal was then and now, supported by massive interventions both in promoting the cultivation of sugar beets and also in building processing capacity. This was done because processing capacity is the Achilles' heel of the Russian sugar industry. Two very unique aspects of Russian foreign trade in sugar are competitiveness and territorial structure. As stated above, Russian foreign trade conducted within the HS 17 aggregation is characterized by a negative foreign trade balance and by imports which overwhelmingly exceed exports. The most important trade partners for Russia are on the import side, especially in Latin America, Europe and Asia. By contrast, their most important export partners are in Asia and Europe-with a strong dominance by CIS countries.

As outlined above, sugar within the framework of the HS 17 aggregation represents about 18 % of exports, and about 50 % of imports. With regard to this, it should be noted that most of the exports go to Asian member countries of the CIS (93 % of the total value, and 94 % of the total volume achieved). With regard to imports, most sugar imports (more than three-quarters of which are raw sugar) come to Russia from Latin America (63 % of the value of imports, and 66 % of the total imports achieved).

Two other major regions which export sugar to Russia are Asia (11 %) and Europe (14 %-with a high concentration of exports from EU countries). Regarding the resulting balance, it can be stated that the Russian Federation reached a positive balance only in relation to CIS and Asian countries. In regard to other regions, the balance of trade in sugar is highly negative. With this in mind, it is advisable to highlight the enormous contribution of Latin America to the resulting negative balance of the trade in sugar (although it should be stressed that the negative balance of Russian trade in sugar is gradually decreasing along with the gradual development of their own production capacities).

The above results indicate that in general terms, the Russian Federation does not possess comparative advantages in

the sugar trade. When it is able to obtain comparative advantages-and this only happens within specific segments of the countries with which Russia is linked through a network of special trade agreements (Bodin and Gudoshnikov 2010, 2011, 2012). In this respect it is important to highlight, in particular, the dependence on the markets of CIS countries. The research results show that Russian sugar does not have comparative advantages in relation to the overwhelming majority of the analyzed regions. The only group of countries that Russia is able to implement a comparative advantage in the CIS group (especially in relation to Kazakhstan, Turkmenistan, Tajikistan and Uzbekistan). However, it must be stated that the territorial structure is highly centralized. In exports, the trade flows achieved from the first thirty partners represent approximately 99.4 % of total exports. Exports in this regard are highly concentrated if we focus on the share of the TOP 10 (Kazakhstan, Ukraine, Belarus, Turkey, Azerbaijan, Mongolia, Tajikistan, Kyrgyzstan, Georgia, Germany, 82.3 %) or TOP 5 (Kazakhstan, Ukraine, Belarus, Turkey, Azerbaijan, 65.3 %) partners (Wegren 2012).

The Russian sugar trade has been influenced by many factors in recent years. Some of the most important factors include the existence of a customs union between Russia, Belarus and Kazakhstan, and the existing free-trade zone between Russia and the CIS countries. Imports of sugar from the countries listed above are subject to preferential duties that are significantly lower when compared with the duty on sugar from other countries (duties ranged around the level of 340 USD/tonne and higher). The import of raw sugar is an exception because it is an important raw material for the production of white, refined sugar (depending on the destination and world market price, the duty imposed on raw sugar ranged from 250 to 270 USD/tonne). The time of year and whether the sugar is from sugar beets or sugarcane play an important role in determining the amount of duty.

For example, the raw sugar import duty charged by the customs union comprising Russia, Kazakhstan and Belarus will rise to 250 USD per tonne in May (2015), up from 240 USD in April (2015). The raw sugar import duty in May is based on the average monthly front-month raw sugar price in New York in March, which was 12.84 cents/lb. A duty of 250 USD per tonne, the highest possible under the tariff schedule, is applied for an average raw sugar price of 13.00 cents/lb or less. Sugar refiners in Russia have warned the government that there may be domestic shortages of the sweetener if the import duty on raw sugar is not lowered, according to officials at the Russian Sugar Producers' Association (Soyuzrossakhar). Last year, the Russian Federation imported 642,000 tonnes of raw sugar, but that number is expected to fall to around 500,000–550,000 tonnes this year as a result of the higher tariff, according to Soyuzrossakhar. More than 70 % of the raw sugar that is expected to be imported this year had arrived in the country in the period of January to March (Anonymous 2015).

Conclusion

After an extensive period of stagnation, the Russian domestic sugar production capacity has experienced a significant recovery. Due to a governmental program (Sedik et al. 2013) that was supported at both the federal and regional levels, the sugar production industry in Russia has significantly strengthened production potential and reduced its dependence on sugar imports. As a result of this program and an increase in Russia's sugar beet production, Russia has re-emerged as a real player in the sugar market.

In addition to this, the growth of domestic and international quality indicators associated with this sector have contributed to the increase in productivity and competitiveness of the Russian sugar industry. These indicators have shown consistent domestic yield growth in beets per hectare, as well as increase in sugar content. Modernization has also played a major role in Russia's return to the sugar market. New processes have resulted in efficient sugar extraction and additional products. Again, this has decreased Russia's need for imports. With a modernized production capability and a series of governmental reforms, Russia has become very competitive.

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