

# Russian agricultural trade and world markets

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## Abstract

Russia has moved from being a large importer of grain, soybeans, and soybean meal during the late Soviet period to a major grain exporter. The country has become the world's top wheat exporter, supplying 20–23 percent of total world exports in 2017–2018. This article examines how Russia's transition from a planned to a market economy that began in the early 1990s has led to substantial restructuring of its agricultural production and trade, especially in its livestock and grain sectors. The article also discusses the consequences of that restructuring for world agricultural markets, and presents outlook for Russia's agricultural trade. Another key development is that the country's livestock sector contracted by about half during the 1990s, a result being Russia became a big meat importer. However, since 2000 that sector has rebounded, and meat imports (especially of chicken and pork) have fallen considerably.

*Keywords:* Russia, Russian agriculture, agricultural trade, grain trade, economic crises.

*JEL classification:* Q1.

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## 1. Introduction

During the last decades of the Soviet period, Russia (along with the Soviet Union as a whole) was a major importer of grain, soybeans, and soybean meal, which were needed to feed the expanding livestock sector. However, the severe contraction of that sector during the transition decade of the 1990s virtually terminated those imports. Around 2000, grain production began to increase steadily, creating surpluses for export. By 2017–2018, Russia was supplying 10–13 and 20–23 percent of world exports of total grain and wheat, respectively.<sup>1</sup> During

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<sup>1</sup> U.S. Dept. of Agriculture, Foreign Agricultural Service. Production, supply and distribution online (USDA PS&D).

the 1990s, the country responded to the drop in domestic livestock output (meat and dairy products) by increasing imports, and Russia became a major world importer of beef, pork, and chicken. Yet, since 2000 the livestock sector has been reviving, and as a result meat imports have declined significantly.

This article examines the extreme fluctuations in Russian agricultural trade since the country began its market-oriented reforms in the early 1990s and how those changes have impacted world agricultural markets, especially for grain and meat. The article also examines the strong interrelationship between the country's agricultural production and trade. In 2014–2015, Russia experienced an economic crisis, which coincided with Western economic sanctions being imposed against the country stemming from geopolitical conflict, and Russia countering with an agricultural import ban against the sanctions-enacting countries. The article discusses how those events have affected Russian agricultural and food consumers, producers, and trade, as well as foreign exporters to Russia. Lastly, the article assesses the outlook for Russian agricultural trade, and presents projections from the U.S. Dept. of Agriculture for Russian exports of wheat, barley, and corn in the year 2028, generated by its model of world agricultural trade.

The next section discusses the magnitude and structure of Russia's agricultural trade, while the third, fourth, and fifth sections examine how the country's agricultural production and trade changed during the 1990s, 2000s, and crisis years of 2014–2015, respectively. The second to last section assesses the outlook for the country's agricultural trade, before the conclusion.

## 2. The volume and structure of Russia's agricultural trade

Fig. 1 gives Russian agricultural trade since 2000, and three features stand out. The first is that both imports and exports have grown substantially. The second feature, however, is that after peaking in 2013, imports dropped heavily over 2014–2016. The decline was caused mainly by the ban that the Russian government established in 2014 on agricultural imports from the major Western countries, as well as the economic crisis that hit Russia in 2014–2015 (both of these developments and their effects to be discussed later in the article). The third feature is that since 2000, Russia has been a bigger agricultural importer than exporter, and as

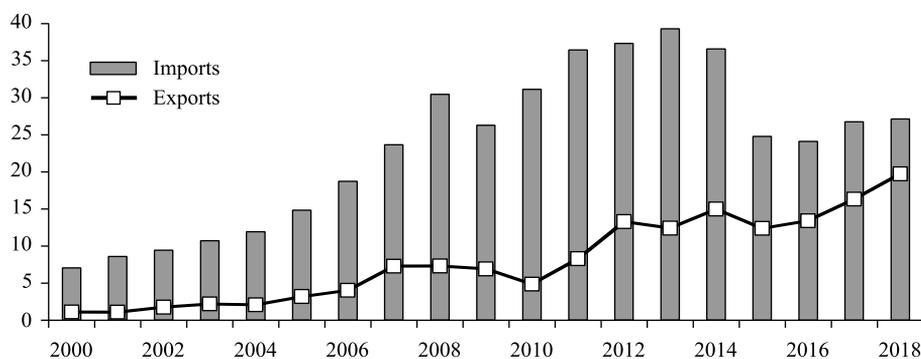


Fig. 1. Russian agricultural and food imports and exports, 2000–2018 (billion U.S. dollars).

Note: Trade values do not include fish and seafood.

Source: United Nations, Trade Data Monitor.

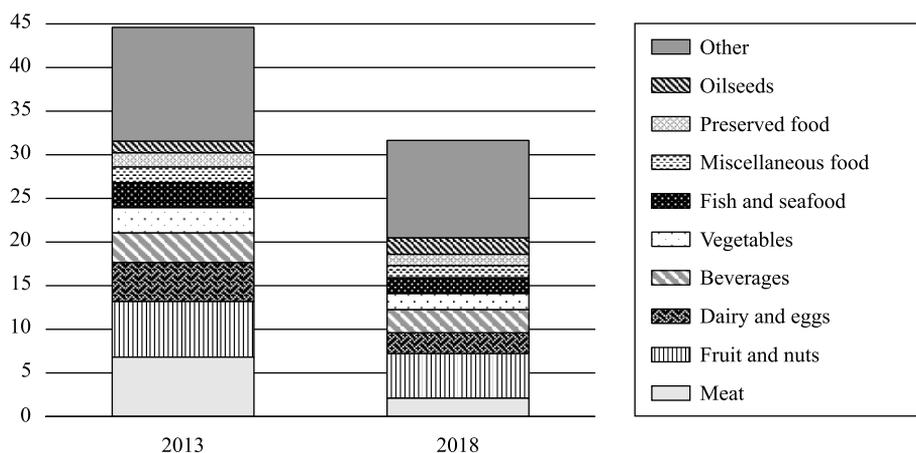


Fig. 2. Russian agricultural imports, 2013 and 2018 (billion U.S. dollars).

Source: United Nations, Trade Data Monitor.

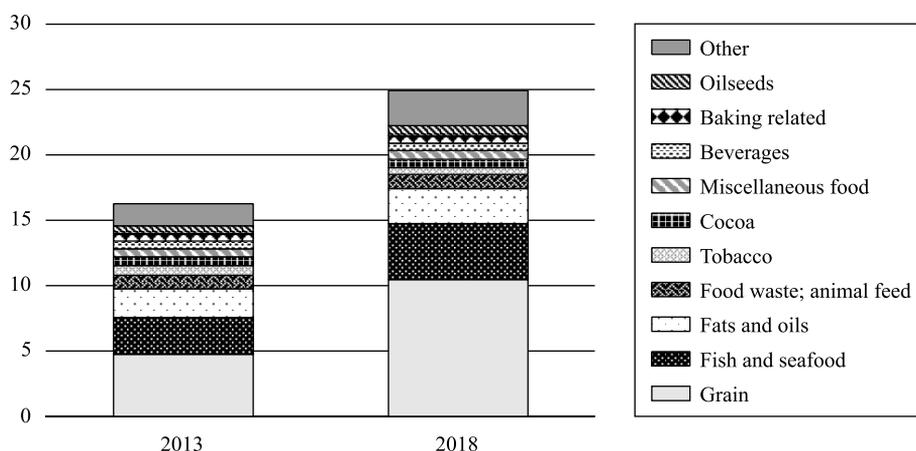


Fig. 3. Russian agricultural exports, 2013 and 2018 (billion U.S. dollars).

Source: United Nations, Trade Data Monitor.

such has run agricultural trade deficits. Yet, the drop in imports in 2014–2016, along with the continued growth in exports, has narrowed the deficit considerably.

The main explanation behind the agricultural trade deficit is that Russia is a large exporter of bulk commodities (especially grain), while it is a major importer of high value products (HVP's). Fig. 2 shows that in 2013 Russia's main agricultural imports were livestock products (such as meat and dairy products), fruit and nuts, and processed foods and beverages. By 2018 imports of these HVP's had fallen significantly (especially meat), though these goods remain the country's dominant agricultural imports.

Fig. 3 shows that Russia's top agricultural export (by product group) is grain, followed by fish and seafood and then fats and oils.<sup>2</sup> Russia has become

<sup>2</sup> The total import and export values in Figs. 2 and 3 for 2013 exceed the values for total imports and exports for that year in Fig. 1. The reason is that the trade values in Fig. 1 do not include fish and seafood.

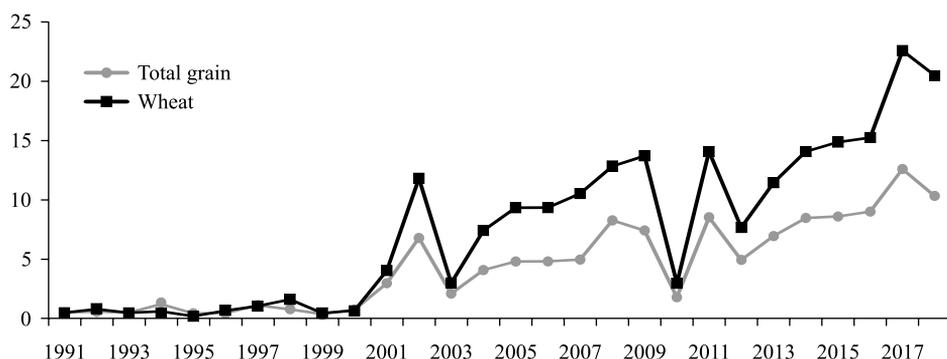


Fig. 4. Russia's share in world grain exports, 1991–2018 (%).

Note: Exports are gross.

Source: USDA Production, supply, and distribution online.

a leading grain exporter, especially of wheat, so that in recent years it has supplanted the United States as the world's top wheat exporter. In 2017–2018, Russia supplied 10–13 percent of total world grain exports, and 20–23 percent of exports of wheat (Fig. 4).<sup>3</sup> In volume terms, wheat accounted in 2017–2018 for 80 percent of Russia's total grain exports, while barley and corn had shares of 11 and 9 percent. In 2017–2018, Russia provided 20 and 2.5 percent of world exports of the latter two grains, respectively (USDA PS&D). The country's main foreign markets for its grain are the Middle East and North Africa (especially Turkey, Egypt, Sudan, Morocco, and Yemen), certain Asian countries (such as Bangladesh and Vietnam), Nigeria, and some countries that formerly were Soviet republics (such as Latvia and Azerbaijan).

### 3. Russian agricultural production and trade during the transition decade of the 1990s

In the early 1970s, the Soviet government decided to expand the livestock sector in order to improve the population's standard of living by providing more meat and dairy products. The fast-growing livestock herds (especially cattle and pigs) required so much feed that the USSR became a major importer of feed grain, soybeans, and soybean meal. Table 1 shows that over 1987–1991, Russia imported on net 21 million metric tons (mmt) of grain a year (annual average; USDA PS&D). The expansion of the livestock sector required heavy state subsidies to both consumers and producers of livestock products, in the form of direct budget subsidies and indirect subsidies through the price system, whereby the prices of agricultural inputs were set low relative to food prices (Liefert et al., 1993). However, the subsidies succeeded in increasing Russian and Soviet output of meat and other livestock products, so that by 1990 Russians were consuming these products at levels similar to that in many (much richer) developed countries (Sedik, 1993).

The economic reforms inherent to Russia's move from a planned to a market economy that began in 1992 largely eliminated both the direct and indirect subsi-

<sup>3</sup> For all data given on Russian grain area, production, and trade throughout this article, grain excludes rice, buckwheat, and pulses (which are traditionally included in Russian official grain data).

**Table 1**  
Russian grain and meat production and trade (million metric tons).

	Grain		Meat	
	Production	Net trade	Production	Net trade
1987–1991	95	(20.9)	7.2	(1.9)
1992–1995	84	(7.9)	5.4	(1.4)
1996–2000	63	(3.0)	3.6	(2.5)
2001–2005	76	8.1	3.7	(2.8)
2006–2010	82	14.4	5.4	(3.1)
2011–2013	81	21.8	7.1	(2.5)
2014–2016	104	33.6	8.2	(1.3)
2017–2019	116	46.6	9.2	(0.7)

*Note:* Figures are annual average values during the period identified at the left. Figures for grain are marketing year (July–June), and for meat—calendar year. For meat production and trade, the first row covers 1989–1991, not 1987–1991. Trade values in parentheses are net imports, without parentheses—net exports. Grain production and trade exclude rice, buckwheat, and pulses. Meat covers beef, pork, and chicken.

*Source:* USDA Production, supply, and distribution online.

dies to the agricultural sector. This generated a huge drop in the amount of inputs used in production, and thereby a massive downsizing in agricultural output, especially in the livestock sector (Liefert and Liefert, 2012). Table 1 shows that Russian meat production fell from 7.2 mmt a year over 1989–1991 (annual average) to 3.6 mmt over 1996–2000. The decline in output of dairy products, as well as live animals (cattle, pigs, and chickens), was equally severe.

Yet, Russian consumption of meat and dairy products did not fall as much as domestic production, as the country substantially increased its imports of these livestock products (see Fig. 5 for meat imports). Table 1 shows that from 1989–1991 to 2006–2010, Russia’s yearly (net) meat imports rose by 64 percent to 3.1 mmt (using annual averages for the two periods). Aggregate (gross) meat imports—of beef, pork, and chicken—peaked in volume terms in 2008 at 3.5 mmt, with Russia accounting in that year for 18, 18, and 16 percent of world imports of those three meats, respectively (USDA PS&D).<sup>4</sup> The main foreign meat suppliers were the EU, United States (chicken), and Brazil.

The drop in Russia’s domestic demand for animal feed stemming from the contraction of the livestock sector largely ended the country’s imports of grain (as well as soybeans and meal). From 1987–1991 to 1996–2000, the country’s yearly (net) grain imports fell from 21 mmt to just 3 mmt (annual averages; see Table 1). Not only did imports of grain decline, but so also did grain production. From 1987–1991 to 1996–2000, Russia’s yearly grain output decreased by 20 percent from 95 to 76 mmt (using annual averages; see Table 1).

The severe shrinkage of Russian agriculture during the 1990s caused considerable hardship for producers (especially of livestock goods) and was viewed by the Russian government as a disaster. However, the major restructuring of agricultural production and trade during the decade appears to have been an economically rational and necessary correction of the overexpansion of the sector during the last decades of the Soviet period (and again especially of the livestock industry).

<sup>4</sup> Meat imports plunged in 1998–2000 because of the major economic crisis Russia suffered in those years. The crisis reduced GDP (and correspondingly consumer income) and depreciated the ruble, which raised Russian domestic prices for imports.

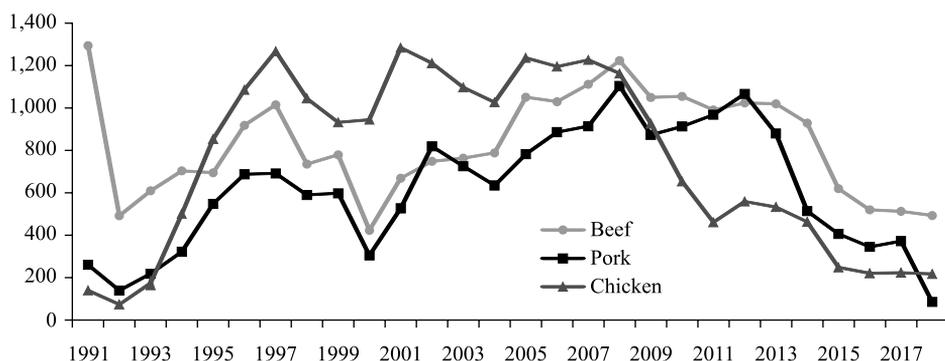


Fig. 5. Russian meat imports, 1991–2018 (thousand metric tons).

Note: Imports are gross.

Source: USDA Production, supply, and distribution online.

#### 4. Russian agricultural production and trade in the 2000s

Around 2000, Russian agricultural production started to rebound, both crops and livestock goods. Russian grain output began rising steadily; from 1996–2000 to 2017–2019, yearly production increased from 63 mmt to 116 mmt (annual averages; see Table 1). Wheat, barley, and corn are the main grain crops, comprising 66, 16, and 11 percent of the country's total grain output in 2017–2019 in volume terms, respectively (USDA PS&D).

Growing grain output created sizeable surpluses for export. Russia moved from being a net grain importer of 3 mmt a year (annual average) during 1996–2000 to a net grain exporter of 47 mmt a year in 2017–2019 (see Table 1). In addition to rising production, another reason for the export growth is that the extreme contraction of the livestock sector during the 1990s reduced domestic demand for grain used as animal feed. Rather than importing grain and oilseeds to feed a high-cost livestock sector during the late Soviet period, Russia downsized the sector, replaced domestically produced livestock goods with imports, and beginning around 2000 began exporting grain. These changes appear to be consistent with the country's fundamental cost competitiveness (or comparative advantage) vis-à-vis world agriculture and markets (Liefert, 2002).

Russian grain production (and correspondingly exports) has increased mainly because of rising yields rather than area. Russian harvested grain area<sup>5</sup> fell from 58 million hectares during 1987–1991 (annual average) to 40 million during 1996–2000, and then rebounded only slightly to 41 million hectares during 2017–2019 (USDA PS&D). Grain yields, on the other hand, have increased substantially, from 1.63 tons per hectare during 1987–1991 (annual average) to 2.81 tons per hectare over 2017–2019 (computed from data from USDA PS&D). Drivers of the yield growth include a rebound in fertilizer use (after major decline in the 1990s), the use of more advanced and technically superior inputs (some of them imported, such as high quality seeds and machinery), and a general improvement in farm management that reduces post-harvest losses and increases farm efficiency (Liefert et al., 2013).

<sup>5</sup> Contrary to Russian official statistics, USDA PS&D grain area numbers give harvested rather than planted area.

Russian production of livestock products also began a major reversal around 2000. From 1996–2000 to 2017–2019, Russian yearly meat production more than doubled—from 3.6 mmt to 9.2 mmt (again using annual averages over the periods; see Table 1). The growth in chicken production has been especially high, with output rising from 0.8 mmt in 2000 to 4.7 mmt in 2019 (USDA PS&D). Pork output has also risen substantially, though not beef. Growing Russian meat production has displaced imports, which after 2006–2010 began to decline (see Table 1).

Farm level changes and improvements have also helped drive the revival of the livestock sector. In 2000, the small household plots (typically only half a hectare in size) maintained by the workers on the large former state and collective farms inherited from the Soviet period (and in the 1990s officially reorganized as corporate farms) accounted for about half of Russian meat production.<sup>6</sup> Since then, however, large modern livestock-producing enterprises have arisen to dominate the production of chicken and pork. Beef production, however, remains largely non-modernized, with most output coming from the culling of dairy cows.

Gokhberg et al. (2017) and Kuzminov et al. (2018) show that productivity-enhancing investment and technological change are occurring in Russian agriculture. For example, between 2010 and 2015, investment in machinery and equipment grew by 120 percent in real terms. Empirical studies find that since 2000, productivity in Russian agriculture has been increasing (more output from a given level of inputs), thereby raising the output of grain and meat, and consequently increasing grain exports and reducing meat imports. Bokusheva et al. (2012) calculate that from 1999 to 2008, total factor productivity (TFP) in Russian agriculture grew by about a quarter, while Swinnen et al. (2012) find that during 2000–2007 TFP rose even more substantially—by 54 percent. Rada et al. (2017) find that from 1998 to 2013, Russian agricultural TFP rose by 72 percent, with productivity growth highest in southern European Russia, which specializes in the production of grain and oilseeds.

However, the livestock sector has benefited from not only input productivity growth but also favorable state policy. In the 2000s, the Russian government took action to reverse the extreme decline of the livestock sector during the 1990s. In 2005, the federal government identified agriculture as a national priority area that would receive increased funding (along with health, education, and housing). From 2005 to 2010, total state support to agriculture rose by 135 percent in real (inflation-adjusted) terms.<sup>7</sup> In 2003, the state also established a restrictive regime of meat import quotas, which have yet to be abolished. The government also began extensively to impose health and sanitary restrictions on imports of meat, a policy that did not diminish much after Russia joined the World Trade Organization in 2012.

Although Russia's exports of grain and other agricultural products have risen steadily since 2000, so also has the country's imports, and the country has consistently run deficits in its agricultural trade. Imports increased during the first decade of the 2000s for two main reasons. The first is that the Russian economy grew, with yearly GDP expanding from 2000 to 2008 by 6.6 percent on average.<sup>8</sup>

<sup>6</sup> Russian Federal State Statistics Service (Rosstat). Russian statistical yearbook.

<sup>7</sup> Ibid.

<sup>8</sup> International Monetary Fund, IMF data.

Rising GDP increased consumer income, and correspondingly demand for imported foods. The second reason for the import growth is that from 2000 to 2008, the Russian ruble appreciated substantially in real terms.<sup>9</sup> The technical reason for the real ruble appreciation is that Russia's inflation rate exceeded the ruble's nominal rate of depreciation. In more intuitive terms, the domestic inflation generated imports by making them less expensive relative to competing domestically-produced goods.

Russian agricultural imports fell in value terms in 2009 because of the macroeconomic crisis that hit the country that year (as well as much of the rest of the world). In 2009, Russian GDP dropped by 7.8 percent, and the ruble depreciated substantially in both nominal and real terms.<sup>10</sup> Both developments motivated consumers to decrease purchases of imported foods. However, the resumption of GDP growth and real appreciation of the ruble in 2010 restored the growth in the country's agricultural imports.

## 5. Russian agricultural trade during the economic crisis of 2014–2015

In 2014–2015, Russia encountered geopolitical and economic challenges. Early in 2014 conflict with Ukraine led to strained relations with the United States and other major Western countries, which imposed economic sanctions against Russia. Russia responded by establishing an import ban on many agricultural and food products against the countries that enacted sanctions. In late 2014, world oil prices fell substantially, to less than half the level of a year earlier.

By 2015, these developments had plunged Russia into economic crisis, characterized by both recession and price inflation. The Western sanctions largely terminated international investment in and lending to Russia, and motivated large-scale capital flight, both of which decreased investment (Liefert et al., 2019). Given that in 2013 about 70 percent of Russia's exports (in value terms) were energy products (mainly oil and natural gas), the oil price plunge slashed the country's export earnings. These adverse developments caused wealth, aggregate demand, and GDP all to fall. In 2015, Russian GDP dropped by 2.3 percent. GDP growth in 2016 was a paltry 0.3 percent, followed in 2017 and 2018 by 1.6 and 2.3 percent.<sup>11</sup>

The oil price collapse also resulted in substantial depreciation of the ruble (about 50 percent) against the U.S. dollar and other major currencies.<sup>12</sup> The depreciation in turn generated domestic inflation by raising prices for imported goods, with the consequent shift in demand from imported to domestically-produced substitutes also increasing prices. Russian price inflation thereby rose from 7 percent in 2013 to 15–16 percent in 2015, dropping back to 7 percent in 2016.<sup>13</sup>

The agricultural import ban that Russia imposed in August 2014 applied to the United States, EU, Norway, Australia, and Canada, and covered the products

<sup>9</sup> Economic Research Service (ERS), U.S. Dept. of Agriculture, International macroeconomic database.

<sup>10</sup> International Monetary Fund, IMF data; ERS International macroeconomic database.

<sup>11</sup> IMF data.

<sup>12</sup> Given that most of Russia's energy exports are traded in dollars rather than rubles, the oil price decline did not directly lower world demand for the ruble. Rather, the demand for rubles fell because of the decrease in Russian export earnings to be repatriated/converted from dollars to rubles.

<sup>13</sup> IMF data.

meat, milk, cheese, other dairy goods, fish and other seafood, fruit, vegetables, nuts, and many processed foods. The ban has been renewed every year since 2014 (it is still in place at the time of this article's writing), and since that year has been extended to Albania, Iceland, Liechtenstein, Montenegro, and Ukraine.

In 2013, about 40 percent of the food consumed within Russia was imported (in value terms). The import share for meat was around 25 percent, and almost 70 percent for fruit (FAO, 2014). The import ban thereby exacerbated the inflation in food prices, which rose from 6 percent in 2013 to 10 and 21 percent in 2014 and 2015, and then dropped back to 6 percent in 2016.<sup>14</sup> The inflation contributed to a rise in Russian poverty during these crisis years, with the poverty rate (as determined by those living below the national poverty line) increasing from 10.8 percent in 2013 to 13.3 percent in 2015 (World Bank, 2017). However, these challenging conditions for Russian consumers did not threaten the country's overall food security. Given that Russia imports mainly high-value products, the import ban and price hikes did not lower the availability of staple foodstuffs such as wheat and other grains.

Although the import ban and food price inflation hurt Russian consumers, these developments helped Russian agricultural producers. Higher prices and the trade protection created by the ban stimulated production. Some mitigating points are that ruble depreciation also raised prices for imported agricultural inputs, and the fall in state revenue during the economic downturn motivated the government to reduce support to agriculture. In real terms, total Russian state spending on agriculture (including by regional governments) declined from 2013 to 2015 by 16 percent.<sup>15</sup>

These qualifications notwithstanding, the total effect of all these crisis-related developments on agricultural output was positive. During 2011–2013, total Russian agricultural production grew at the average annual rate of 3.9 percent, which then jumped to 5.4 percent (average annual) in 2014–2015.<sup>16</sup> Russian meat production (of beef, pork, and chicken) increased by 4.7 percent a year on average during 2014–2016, though this was a continuation of high growth during the preceding years (USDA PS&D).

The crisis-induced drop in food consumption and rise in production resulted in a major fall in Russian agricultural and food imports, which from 2013 to 2015–2016 declined in value (U.S. dollar) terms by about a third, and then rose only marginally in 2017–2018 (see Fig. 1). Compared to 2011–2013, Russian (net) meat imports over 2014–2016 were down by 19 percent, dropping from 2.5 to 1.3 mmt (on an annual average; see Table 1). Just as ruble depreciation made imports more expensive to Russian consumers, it enhanced the price competitiveness of Russian exports on world markets by making the products less expensive to foreign purchasers. This contributed to the growth in Russian (net) grain exports from 81 mmt a year in 2011–2013 (annual average) to 104 mmt in 2014–2016 (see Table 1).<sup>17</sup>

<sup>14</sup> International Monetary Fund, IMF data.

<sup>15</sup> Russian Federal State Statistics Service (Rosstat). Russian statistical yearbook.

<sup>16</sup> *Ibid.*

<sup>17</sup> Although Russia's exported grain is priced and sold largely in U.S. dollars (and sometimes euros), depreciation of the ruble nonetheless results in Russian grain exporters gaining a competitive price advantage vis-a-vis foreign competitors. The depreciation raises the domestic prices that Russian grain producers receive, and Russian grain producers and exporters can use some of that gain to reduce the dollar/euro price at which they sell the grain on the world market.

Russia's agricultural import ban and drop in agricultural imports have affected major foreign agricultural exporters unevenly. The EU has been adversely impacted, given that Russia is a major foreign market for its agricultural exports. In 2013, the EU sold \$15–16 billion of agricultural and food products to Russia, about 10 percent of total EU agricultural exports, and 35–40 percent of Russia's total agricultural imports.<sup>18</sup> Russia's import ban hurt many EU agricultural subsectors. In 2013, Russia was the leading foreign market for EU meat (especially pork), dairy (such as yogurt), fruit, and vegetables, taking 18, 17,<sup>19</sup> 40, and 23 percent of total EU agricultural exports of those product groups, respectively.<sup>20</sup> However, in 2015–2016, Russian imports of those foods from the EU almost completely ended. In contrast, Russia is a small market for U.S. agricultural goods, so that the import ban has not strongly impacted U.S. producers as a whole. In 2013, sales to Russia comprised less than 1 percent of total U.S. agricultural exports, \$1.32 billion out of \$162 billion (USDA FAS, 2017).

Countries that have benefited from Russia's agricultural import ban are the major exporters of the banned products, especially meat and dairy goods, which were not among the embargoed countries, in particular Brazil. For example, from 2013 to 2016 Brazil increased its annual pork exports to Russia by 200,000 tons, a rise of 75 percent.<sup>21</sup> Just as Brazil and other livestock good exporters opportunistically shifted exports to Russia as its imports from the banned countries fell, the embargoed countries were able to some degree to export more to the foreign markets to which these non-banned countries now exported less.

A general effect of Russia's import ban and overall drop in agricultural import demand was to contribute to a reduction in world prices for the banned goods. From 2014 to 2016, the world food price index for meat and dairy products dropped by 21 and 31 percent, respectively (FAO, 2017). Although developments involving Russia were not the sole cause of such strong price declines, they were a contributing factor.

## 6. The outlook for Russian agricultural trade

This section examines the outlook for Russian agricultural trade for about the next 10 years, with a focus on grain exports and meat imports. Using a model of world agriculture, the U.S. Department of Agriculture (USDA) makes projections for the annual volumes of production and trade of key commodities for the major countries and regions of the world 10 years into the future. Both the general and specific projections that we give in this section for future Russian grain and meat production and trade are either directly from, or supported by, this USDA (2019) outlook exercise for Russian and world agriculture, with specific projections given for the out year of 2028.

Russian grain exports are likely to continue to grow over the next decade, as grain production keeps rising and thereby increasing surpluses for export. As in past years, the output growth will probably be driven more by rising yields rather than area.

<sup>18</sup> United Nations. Trade data monitor.

<sup>19</sup> The 17 percent import share applies specifically to yogurt, not all dairy products.

<sup>20</sup> United Nations. Trade data monitor.

<sup>21</sup> *Ibid.*

Some specialists argue that Russia could get a substantial boost to grain production by returning to cultivation the area that was dropped during the 1990s (see Rau, 2012, and the session at the Global Forum in Berlin, 2011<sup>22</sup>). Yet, most of the abandoned grain area was in the northern and eastern parts of the country where natural conditions and remoteness make production costs high (Liefert and Liefert, 2015). World grain prices would have to rise considerably to cover the hefty production costs and remain high for an extended period of time, to give producers the confidence that recultivating such land could be profitable. Costly investment would also be required to improve the physical and commercial infrastructure for storing and transporting the additional grain. Also, in the better climatic regions of the country conducive to grain production, some grain area is being shifted to produce oilseeds (mainly sunflowerseed and soybeans). Although some rise in Russian grain area in the future is possible, Liefert and Liefert (2015) and Meyfroidt et al. (2016) argue that for the reasons just discussed, large growth in Russian grain area is unlikely.

However, rising yields could continue to power growth in Russian grain output and exports. Although Russian grain yields have increased substantially during the last two decades, they still are significantly below levels in developed Western countries with comparable climatic conditions. In a major study on Russian agriculture, the European Commission (2014) finds that in 2007–2009, grain yields in southern European Russia were less than half those in the United States (2.9 versus 6.8 tons per hectare), and just a bit more than half in the Volga, Ural, and Siberian parts of the country compared to Canada (1.6 versus 3.0 tons per hectare). Improving technology, often embodied in inputs such as seeds and machinery, can continue to raise yields, though the decline in Western investment and agricultural contacts resulting from Western economic sanctions and geopolitical tension constrains that process.

Rylko et al. (2008) argue that a major cause behind the output growth and progress in Russian agriculture since 2000 has been the emergence of “new operators.” These producers continue the Russian agricultural practice of being big, with farms typically in the thousands of hectares. However, these producers appear to be more innovative, profit-oriented, and cost-minimizing than the large former state and collective farms that dominated Russian agriculture during the 1990s. Very large agrohholdings are a subgroup of these new operators. They are vertically-integrated enterprises that typically acquire a number of existing farms and combine primary agriculture, distribution, processing, and sometimes retail sale. New operators and agrohholdings are prominent in the Russian grain belt of south-central and southern European Russia (which covers the country’s rich black soil regions; FAO, 2009).

Some specialists (Rylko et al., 2008; FAO, 2009) argue that the new operators, and especially agrohholdings, outperform other agricultural producers in terms of productivity, and thereby are a major cause of the growth in Russian agricultural production (including grain) since 2000. On the other hand, Gataulina et al. (2005) and Hockmann et al. (2009) find that agrohholdings are not more productive or profitable than other large Russian agricultural enterprises. Perhaps agrohholdings have become so large and unwieldy that they suffer from disecono-

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<sup>22</sup> Global Forum in Berlin, 2011, Session on “Russia’s role in world food supply.”

mies of scale. Although the authors of this article acknowledge the views of these latter specialists, we believe that the new operators and agrohholdings have on net been a positive development for Russian agriculture, including the grain sector, and that the continued increase in their numbers and influence could contribute further to the growth in Russian grain production and exports.

Using its model of world agriculture previously mentioned, the U.S. Department of Agriculture (USDA PS&D; USDA, 2019) projects that Russian yearly output of wheat, barley, and corn will increase from 76, 18, and 13 mmt in 2016–2018 (annual average) to 80, 20, and 14 mmt, respectively, in 2028 (moderate rather than strong growth). USDA also projects that Russian yearly exports (gross) of wheat, barley, and corn will grow from 35, 4.4, and 4.7 mmt in 2016–2018 (annual average) to 37, 6.7, and 5.8 mmt in 2028.

The outlook for Russian agricultural imports seems less clear. Total agricultural imports in value terms will likely continue to rise over the near to medium term, driven largely by GDP growth that increases consumer income and demand for goods, including imported foods. The IMF predicts that from 2020 to 2024, Russian GDP will increase at an average annual rate of 1.9 percent. However, any continued growth in Russian production of agricultural import-competing goods will cut into the import expansion. The further development of new, large, and modern livestock-producing operations will help drive the growth in meat output. As discussed earlier, such enterprises have contributed to the boom in Russian chicken production since 2000, as well as in pork output. In 2001, Russian pork production ended its decline that began in the early 1990s, and from that year to 2019 output has risen by about 150 percent—to 3.2 mmt (USDA PS&D).

It is expected that governmental policy will continue to abet the output growth in the livestock sector, as well as directly reduce imports. The state regime of restrictive tariff rate quotas on meat imports should continue into the future, and the Russian government appears likely to extend indefinitely the agricultural import ban, which strongly restricts imports of livestock goods. These import-constraining policies are consistent with the state's goal for Russia to become as self-sufficient in agriculture as possible, with the exception of tropical and other warm-weather products that the country cannot economically produce and thereby must import. Central features of the Russian government's concept of food security are import substitution and self-sufficiency (Wegren et al., 2016). The government has even expressed the objective of Russia switching from being a chicken importer to exporter.<sup>23</sup> This would be a major reversal, given that as recently as 2007 the country imported 1.23 mmt of the product, though with imports dropping to 0.20 mmt by 2019 (USDA PS&D).

It therefore appears quite likely that during the 2020s, Russian imports of meat will continue to decline, an assessment supported by the USDA (2019) projections for Russian agriculture. Any further growth in the Russian livestock sector will also impact the grain sector and exports, in that rising domestic demand for animal feed will cut into the domestic grain surpluses available for export. As discussed earlier, Russia exports mainly low quality food and feed wheat, as well as the feed grains of barley and corn. Mitigating this point, though, is that the Russian livestock sector is improving its animal feed efficiency (which was

<sup>23</sup> Interfax, *Russia & CIS food and agriculture weekly*.

very low in the Soviet period), so that less feed is needed to produce a given volume of livestock products.

Another factor that might sporadically impede Russia's grain exports in future years is that the country's trade policy could continue to favor the livestock sector over grain producers and exporters. In past years, when domestic grain supplies have been low, say because of drought or other bad weather, and/or grain prices high, the Russian government used an array of policies to restrict grain exports. These included export taxes, a complete export ban that lasted from August 2010 to July 2011, and taxing and obstructing the transport of grain to exporting ports (Liefert et al., 2013). Combined with Russia's climate and volatile weather that can generate poor grain harvests (mainly because of drought but sometimes because of excessive rainfall during planting or harvesting), such policies lower the country's reliability as a grain exporter.

## **7. Conclusion**

Russia's move from a planned to a market economy fundamentally restructured the country's agricultural production and trade. The country switched from being a large grain importer during the late Soviet period to a current major grain exporter, in 2017–2018 supplying 10–13 and 20–23 percent of world exports of total grain and wheat, respectively. Economic transition and reform during the 1990s severely contracted Russia's livestock sector, with the ensuing drop in domestic demand for animal feed contributing strongly to the change in the country's grain trade balance. The country in turn became a large meat importer, taking 17 percent of total world meat imports (of beef, pork, and chicken) in 2008.

During the past two decades, Russia has been a larger agricultural importer than exporter in value terms, because it exports mainly bulk crops while it imports high value products, such as livestock goods (meat and dairy), fruit and vegetables, and processed food. However, the economic crisis and import ban of 2014–2015 cut the country's agricultural imports by about a third, so that the country currently has only a small agricultural trade deficit. High growth in domestic meat production since 2000, as well as various trade controls, is also reducing imports.

Both Russia's aggregate agricultural exports and imports are projected by USDA to continue to grow over the next decade in value terms. Further improvements in farm technology and management are expected to continue to drive an increase in grain yields and agricultural productivity as a whole, and as a result Russian annual grain exports (of wheat, barley, and corn) could rise over the next 10 or so years by 10–15 percent (from the 2016–2018 volume). Expected modest growth in Russian GDP and consumer income is projected to increase agricultural and food imports of high value products. However, statements by the Russian government indicate that it is committed to maintaining the agricultural import ban against the EU, United States, and other major Western countries for the indefinite future. More generally, the country is pursuing a national policy to become as agriculturally self-sufficient as possible (though still importing tropical and other warm-climate products, such as fruit and certain vegetables, that it cannot economically produce itself). Continued productivity growth in the chicken, and perhaps also pork, sectors, driven in part by the move to large modern animal-

producing operations, would further increase domestic meat production, and thereby reduce meat imports.

Any further expansion of the livestock sector could mitigate to some degree the rise in Russian grain exports, by increasing domestic demand for animal feed. Government policy might also continue to favor the livestock sector over the grain economy, by restricting grain exports when harvests are low and domestic prices high. Combined with volatile weather that can cause major annual variation in the size of grain crops, such policies can hurt Russia's reliability as a grain exporter.

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