Russian chemical industry's products in foreign markets in 2022

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Abstract. The article presents the results of the analysis of the activities of enterprises of the Russian chemical industry in the foreign market conducted by the authors following the results of 2022, including the dynamics of exports and imports with countries of the far and near abroad, as well as purchases of goods by the state to meet state and municipal needs. It is shown that due to the current geopolitical situation, a number of Russian chemical industries are experiencing difficulties in the field of world trade, however, the trade balance remains positive, and trade is provided primarily by states friendly to our country, despite the fact that countries unfriendly to Russia have not stopped trading in chemical goods, despite sanctions. It should also be emphasized the importance of strengthening the measures taken by the state in the field of procurement from chemical enterprises in the field of all chemical products to ensure the domestic market and stimulate the development of the domestic chemical complex. The results of the analysis demonstrate the stability of the activity of the Russian sector of the economy associated with the chemical industry.

Keywords: foreign economic activity of Russia, products of Russian chemical complex, export, import.

1 Introduction

The research and analysis of the activities of chemical industry enterprises in the Russian Federation on the external market included the results of 2022. These results covered the dynamics of changes in exports, imports, and the trade balance of the most significant chemical and petrochemical products. It also examined the contribution to the country's foreign trade turnover by countries in the distant foreign markets and the Commonwealth of Independent States (Eurasian Economic Union). Additionally, the study looked into the procurement of goods, works, and services to meet the needs of the state and municipal sectors. The relevance of this assessment lies in the need to understand the impact of the severe sanctions imposed on our country by Western nations during the specified period, particularly regarding goods in the real sector of the economy. This impact may affect the successful achievement of targets in the key sectors and products of the chemical complex outlined in the Chemical Industry Development Program until 2030 (Strategy 2030) [1-4].

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2 Materials and Methods

The dynamics were tracked using data from official Russian statistical agencies such as the Federal State Statistics Service (Rosstat), the Federal Customs Service of Russia (FTS Russia), operational data from the Ministry of Industry and Trade of Russia, the Ministry of Energy of Russia, the Unified Interdepartmental Information and Statistical System (EMISS), and the Unified Information System in the field of procurement [5-10]. For comparison purposes, data from the research assessing the state of Russia's chemical complex in 2021 [11] and the analysis and forecasts by authors from an earlier period [12, 13] were used. Due to the delay in official statistical data, the assessment of most indicators at the time of preparing this material was based on actual data from January to September 2022 and forecasts derived from the average rates of their changes.

3 Results

The trade balance surplus of chemical and petrochemical product exports from Russia in January-September 2022 amounted to $522.9 billion. However, this positive balance is primarily attributed to the most demanded groups of goods abroad, namely mineral fertilizers and ammonia. For other significant key products of the chemical complex, there is a trend of imports exceeding exports. This is especially true for plastic products (see Table 1).

Table 1. Exports, imports, and trade balance of the most significant chemical and petrochemical products of Russia in 2022, $bn

<table>
<thead>
<tr>
<th>No p/n</th>
<th>Goods</th>
<th>Export</th>
<th>Import</th>
<th>Export + Import</th>
<th>Trade Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mineral fertilizers</td>
<td>14,45</td>
<td>0,24</td>
<td>14,69</td>
<td>+ 14,21</td>
</tr>
<tr>
<td>2</td>
<td>Ammonia</td>
<td>1,56</td>
<td>0,001</td>
<td>1,56</td>
<td>+ 1,56</td>
</tr>
<tr>
<td>3</td>
<td>Plastics in primary forms</td>
<td>2,62</td>
<td>2,80</td>
<td>5,42</td>
<td>– 0,18</td>
</tr>
<tr>
<td>4</td>
<td>Chemical and synthetic fibers and yarns</td>
<td>0,08</td>
<td>0,52</td>
<td>0,60</td>
<td>– 0,44</td>
</tr>
<tr>
<td>5</td>
<td>Chemical plant protection products</td>
<td>0,22</td>
<td>0,67</td>
<td>0,89</td>
<td>– 0,45</td>
</tr>
<tr>
<td>6</td>
<td>Rubber products</td>
<td>0,19</td>
<td>1,09</td>
<td>1,28</td>
<td>– 0,9</td>
</tr>
<tr>
<td>7</td>
<td>Tires</td>
<td>0,56</td>
<td>1,50</td>
<td>2,06</td>
<td>– 0,94</td>
</tr>
<tr>
<td>8</td>
<td>Paints and varnishes</td>
<td>0,27</td>
<td>1,28</td>
<td>1,55</td>
<td>– 1,01</td>
</tr>
<tr>
<td>9</td>
<td>Plastic products</td>
<td>1,39</td>
<td>4,30</td>
<td>5,69</td>
<td>– 2,91</td>
</tr>
</tbody>
</table>

Source: data from Rosstat, Federal Customs Service, development of the authors

In 2022, the foreign trade turnover for chemical products in Russia amounted to $3,646.62 billion, including exports - $2,084.76 billion, imports - $1,561.86 billion The largest share of foreign trade turnover was accounted for by China, Brazil, Belarus, India, Kazakhstan, USA, Germany, Finland, Turkey, Poland (Table 2).

Table 2. Countries (Top-10), with the largest contribution to the foreign trade turnover of chemical and petrochemical products with Russia in 2022, $ billion

<table>
<thead>
<tr>
<th>No p/n</th>
<th>Country</th>
<th>Foreign trade turnover with the Russian Federation, $ billion</th>
</tr>
</thead>
</table>

2
The foreign trade turnover of chemical and petrochemical products between Russia and the aforementioned top ten countries in 2022 is as follows:

With China - $17.46 billion, with a negative trade balance (-$10.19 billion). The export of mineral fertilizers and inorganic chemical products is $2.11 billion and $0.57 billion, respectively. The export of plastic products is $0.5 billion. The import of organic chemical compounds and inorganic chemical products is $4.05 billion and $1.73 billion, respectively.

With Brazil - $9.64 billion, with a trade balance of $9.44 billion. The main share of exports is comprised of mineral fertilizers - $9.47 billion, which is associated with the country's agricultural specialization. The import of inorganic chemical products and organic chemical compounds is relatively low, totaling only $0.22 billion.

With Belarus - $5.77 billion, with a trade balance of $0.64 billion. The export of plastic products and mineral fertilizers is $1.3 billion and $0.28 billion, respectively. Imports are mainly attributed to plastic products, amounting to $1.3 billion.

With India - $5.63 billion, with a trade balance of $3.79 billion. The most important exported goods are mineral fertilizers - $4.12 billion. The main import is organic chemical compounds - $0.46 billion.

With Kazakhstan - $5.44 billion, with a trade balance of $0.38 billion. The most important exported goods are plastic products ($0.88 billion), inorganic chemical products ($0.31 billion), mineral fertilizers ($0.36 billion), other chemical products ($0.36 billion), and rubber and rubber products ($0.23 billion). Imports of chemical and petrochemical products amount to $2.53 billion, with inorganic chemical products accounting for $2.09 billion.

With the United States - $4.94 billion, with a negative trade balance (-$2.81 billion). The export of mineral fertilizers is $3.07 billion. The main import is plastic products ($0.21 billion), rubber and rubber products ($0.11 billion), and other chemical products ($0.27 billion).

With Germany - $4.67 billion, with a negative trade balance (-$3.09 billion). The most important exported goods are inorganic chemical products ($0.23 billion), mineral fertilizers ($0.24 billion), plastics and plastic products ($0.11 billion), and rubber and rubber products ($0.13 billion). The main imports include plastic products ($1.36 billion), organic chemical compounds ($0.48 billion), paint and varnish materials ($0.45 billion), cosmetic products ($0.31 billion), cleaning products ($0.39 billion), and other chemical products ($0.45 billion).

With Finland - $3.93 billion, with a trade balance of $3.22 billion. The most important exported goods are mineral fertilizers ($1.78 billion) and organic chemical compounds ($1.17 billion). The import consists mainly of plastic products ($0.13 billion).

With Turkey - $3.68 billion, with a trade balance of $1.33 billion. The most important exported goods are plastics and plastic products ($0.72 billion), inorganic chemical products ($0.69 billion), and organic chemical compounds ($0.5 billion). The main import is plastic products ($0.46 billion) and rubber and rubber products ($0.11 billion).

With Poland - $2.99 billion, with a trade balance of $1.23 billion. The most important exported goods are organic chemical compounds ($0.8 billion), plastics in primary forms ($0.32 billion), and inorganic chemical products ($0.31 billion).

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Trade Turnover (billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>17.46</td>
</tr>
<tr>
<td>2</td>
<td>Brazil</td>
<td>9.64</td>
</tr>
<tr>
<td>3</td>
<td>Belarus</td>
<td>5.77</td>
</tr>
<tr>
<td>4</td>
<td>India</td>
<td>5.63</td>
</tr>
<tr>
<td>5</td>
<td>Kazakhstan</td>
<td>5.44</td>
</tr>
<tr>
<td>6</td>
<td>United States</td>
<td>4.94</td>
</tr>
<tr>
<td>7</td>
<td>Germany</td>
<td>4.67</td>
</tr>
<tr>
<td>8</td>
<td>Finland</td>
<td>3.93</td>
</tr>
<tr>
<td>9</td>
<td>Turkey</td>
<td>3.68</td>
</tr>
<tr>
<td>10</td>
<td>Poland</td>
<td>2.99</td>
</tr>
</tbody>
</table>

*Source: data from Rosstat, Federal Customs Service, development of the authors*
billion), mineral fertilizers ($0.47 billion), and rubber and rubber products ($0.2 billion). Imports consist of plastic products and paint materials ($0.26 billion and $0.15 billion, respectively).

In general, in 2022, Russia's exports of chemical and petrochemical products amounted to $29.9 billion, while the import of chemical and petrochemical goods decreased from $3.27 billion in January to $1.92 billion in September 2022, mainly due to major carriers refusing to transport Russian cargo due to imposed sanctions.

The main volume of exports in 2022 is attributed to countries outside the CIS or the EAEU ($47.29 billion), accounting for 76.0% of the total export of chemical and petrochemical products, while the turnover with the CIS and the EAEU accounts for 11.0% and 13.0%, respectively.

Table 3. Structure of exports to countries that are part of the CIS or the EAEU (in monetary terms) for 2022

<table>
<thead>
<tr>
<th>No p/n</th>
<th>Country</th>
<th>Share of exports, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Belarus</td>
<td>41</td>
</tr>
<tr>
<td>2</td>
<td>Kazakhstan</td>
<td>37</td>
</tr>
<tr>
<td>3</td>
<td>Uzbekistan</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>Kyrgyzstan</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Republic of Moldova</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Azerbaijan</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Armenia, Tajikistan, Turkmenistan</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: data from Rosstat, Federal Customs Service, development of the authors.

The main exporting countries of the CIS and the CIS/EAEU, as indicated in Table 3, are Belarus and Kazakhstan, which account for 78% of the exports. The significant export items to these countries include the following products: primary forms of plastics, plastic products, mineral fertilizers, and tires. Additionally, important export items to Kazakhstan are household chemicals and synthetic detergents, paints and coatings, and plant protection products.

The key export-oriented products of Russia in 2022 are mineral fertilizers. The following groups of goods also occupy a substantial share in exports: primary forms of plastics (mainly ethylene and propylene), plastic products, ammonia, and tires.

According to the Federal Customs Service of Russia, mineral fertilizers account for 48.3% of the total export value of the chemical and petrochemical complex, and primary forms of plastics account for 8.7%. In addition to the mentioned positions, plastic products, ammonia, rubber, and tires are exported (with a combined share of 10.5%).

The volume of goods shipped from own production, completed works, and services of the chemical complex under the OKVED code "20 - Manufacture of chemicals and chemical products" amounted to 5,113.0 billion rubles in 2021, and from January to October 2022, it amounted to 4,906.2 billion rubles, which is 95.6% of the volume in 2021.

The volume of goods shipped from own production, completed works, and services of the chemical complex under the OKVED code "22 - Manufacture of rubber and plastic products" amounted to 1,721.4 billion rubles in 2021, and in 2022, it amounted to 1,585.5 billion rubles, which is 92.1% of the volume in 2021.

According to preliminary estimates, the shipment volume in 2022 amounted to 7,621.83 billion rubles, which is 11.5% higher than in 2021.

The volume of purchases of products from the chemical complex under Federal Law No. 44-FZ "On the contract system in the field of procurement of goods, works, and services for state and municipal needs" amounted to:
- For the code "20 - Chemical substances and chemical products" in 2021: 316.489 million
rubles, and in 2022: 290.731 million rubles.
- For the code "22 - Rubber and plastic products" in 2021: 555.727 million rubles, and in 2022: 436.992 million rubles.

The volume of purchases of products from the chemical complex under Federal Law No. 223-FZ "On procurement of goods, works, and services by certain types of legal entities" amounted to:
- For the code "20 - Chemical substances and chemical products" in 2021: 2.375 billion rubles, and in 2022: 2.508 billion rubles.
- For the code "22 - Rubber and plastic products" in 2021: 1.423 billion rubles, and in 2022: 1.372 billion rubles.

The volume of purchases of products from the chemical complex under Federal Law No. 44-FZ "On the contract system in the field of procurement of goods, works, and services for state and municipal needs" in 2022:
- For the code "20 - Chemical substances and chemical products," increased by 10.4% compared to the same period last year.
- For the code "22 - Rubber and plastic products," increased by 5.1% compared to the same period last year.

The volume of purchases of products from the chemical complex under Federal Law No. 223-FZ "On procurement of goods, works, and services by certain types of legal entities":
- For the code "20 - Chemical substances and chemical products," increased by 28.7% compared to the same period last year.
- For the code "22 - Rubber and plastic products," increased by 14.3% compared to the same period last year.

4 Discussion

In 2022, Russia's chemical complex is facing significant pressure due to geopolitical tensions and sanction restrictions, which have hindered the export of Russian chemical products to international markets. However, the substantial demand for Russian chemical products in the global market has supported price stability, allowing domestic companies to maintain high levels of income in 2022.

Previously obtained and analyzed data on the structure and development potential of the Russian chemical complex's production system, the competitiveness of Russian chemical products in foreign markets, and their demand in the domestic market [14-16], including the maintenance of technological equipment in the required condition at chemical plants [17, 18], have led to the conclusion about the positive dynamics of implementing the 2030 Strategy.

The data from this study show that the foreign trade turnover of chemical products in Russia amounted to $3,646.62 billion, including exports of $2,084.76 billion and imports of $1,561.86 billion. The trade balance surplus for the supply of the most significant chemical and petrochemical products from Russia as a whole amounts to $522.9 billion, which, however, is mainly achieved through traditionally demanded products abroad, such as mineral fertilizers and ammonia. In the case of other categories of chemical products that are essential for the Russian economy, there is a prevalence of imported goods over those sold abroad. This is particularly true for highly processed products such as plastics and paints, whereas, for example, plastics in primary forms, i.e., low value-added products, hover between positive and negative trade balances.

The largest share of the foreign trade turnover is attributed to China, followed by Brazil, Belarus, India, Kazakhstan, the United States, Germany, Finland, Turkey, and Poland, in descending order. It is important to note that negative trade balance is recorded in trade with China, Germany, and the United States.
Regarding exports to countries within the CIS or the EAEU, Belarus and Kazakhstan also occupy leading positions, although trade continues to develop steadily with Uzbekistan, Kyrgyzstan, Moldova, Azerbaijan, Armenia, Tajikistan, and Turkmenistan.

Russia holds a leading position in the world in terms of mineral fertilizer production volume, second only to China and the United States.

The total volume of ammonia shipped for export is lower than the previous year, but the volume of imported ammonia entering the domestic market represents a small share and does not have a significant impact on the overall market volume.

In Russia, the production of paints and coatings lags behind the higher-quality products of foreign competitors. To reduce dependence on foreign supplies, several investment projects are being implemented to increase the production of paints and coatings materials.

A characteristic feature of the external trade in plastics is that the Russian Federation imports products with higher added value and primarily exports basic grades. Almost a quarter of Russian raw materials are sent for export, processed abroad, and then returned to the domestic market at a higher price. In the plastics manufacturing industry, investment projects for increasing the production of high-value-added products are being implemented and planned.

As for government procurement in the chemical industry, their growth should be noted, although their share in the volume of shipped products is low. The volume of shipped chemical substances and products (OKPD2 "20 - Production of chemical substances and chemical products") exceeds the volume of shipped rubber and plastic products (OKPD2 "22 - Production of rubber and plastic products") by several times. However, the share of procurement for rubber and plastic products is greater than the share of procurement for chemical substances and products in 2021 and 2022. The share of procurement within the framework of Federal Law 223 exceeds the share of procurement within the framework of Federal Law 44, which can be largely explained by the specificity of the procurement procedure.

5 Conclusion

Based on the above, it can be concluded that despite serious threats from the external environment, the stability of established production cycles in the domestic chemical complex has withstood the pressure of challenging market conditions.

The foreign trade turnover of chemical products in Russia remains at a high level, and the trade balance surplus for the supply of the most significant chemical and petrochemical products from Russia as a whole is positive.

The largest share of Russia's foreign trade turnover is primarily attributed to China, Brazil, Belarus, India, Turkey, and Kazakhstan, i.e., countries with which friendly relations are maintained. Trade with the United States, Germany, Finland, and Poland also continues, despite the sanctions declared by them.

In addition to the above, the importance of strengthening state measures in procurement to stimulate the development of the domestic chemical complex should be emphasized.

Thus, the forecast made in previous stages of the research regarding the dynamics of the Russian Federation's chemical complex development remains positive, suggesting successful implementation of the Chemical Industry Development Program until 2030.

References


