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## Development of Russian lubricants market under sanction pressure

Maxim V. Chernyaev , Artem M. Kudryashov  

*RUDN University,  
6 Miklukho-Maklaya St, Moscow, 117198, Russian Federation*

 1142220373@rudn.ru

**Abstract.** The oil and gas sector is one of the key sectors in the structure of the economy of the Russian Federation, as well as petroleum products industry, and particularly oil lubricants and components for their production. According to official statistics, the share of exports of petroleum products in monetary terms was 29 % in 2021, and in some years the figure was more than 50 %. Because of global events in recent years, including the impact of the COVID-19 pandemic and the consequences of sanction pressure, significant changes have occurred in the global and Russian lubricants markets, which have led to the emergence of turbulence in the markets, and resulted in uncertainty about the further development. The main purpose of this study is to identify the main trends in the development of the lubricants market in Russia in 2023. Within the framework of the study, the concept of “oil lubricants” and the main technological features of their composition and production process are determined. The analysis of the main geopolitical events and changes that occurred in 2022 and their impact on the lubricants market was carried out. In particular, the influence of the latter on the market dynamics of the main raw material component to produce lubricants, as well as its cost both in retrospect and 2023 expectations (taking into account expected consumption volumes in the domestic and foreign markets) was studied. The study gives a brief description of the market segments, as well as analyzes the main brands that were present on the Russian market in 2022 and changes in their composition due to recent events in the industry. Based on the results of investigation, a comprehensive conclusion about the state of Russian lubricants market at the current time and the prospects for its development in 2023 was formulated.

**Keywords:** Oil & Gas Industry, oil lubricants, development trends, market perspectives, sanctions

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## Развитие рынка смазочных материалов России в условиях санкций

М.В. Черняев , А.М. Кудряшов  

*Российский университет дружбы народов,  
Российская Федерация, 117198, Москва, ул. Миклухо-Маклая, д. 6*

 1142220373@rudn.ru

**Аннотация.** Нефтегазовый сектор является одним из ключевых в структуре экономики Российской Федерации, как и входящая в него отрасль производства нефтепродуктов, немаловажной частью которых являются смазочные материалы и сырьевые компоненты для их производства. Согласно данным официальной статистики, доля экспорта нефтепродуктов в денежном выражении составила 29 % в 2021 г., а в отдельные прошлые годы показатель составлял более 50 %. На фоне мировых событий последних лет, в том числе влияния пандемии COVID-19 и последствий введения санкций со стороны ЕС и США, на глобальном и российском рынках смазочных материалов произошли значительные изменения, повлекшие за собой возникновение турбулентности на рынках и, как следствие, приводящие к возникновению неопределенности относительно направлений дальнейшего развития. Основной целью исследования является выявление главных тенденций развития рынка смазочных материалов России в 2023 г. В рамках исследования определяется содержание рассматриваемого понятия «смазочные материалы», формулируются основные технологические особенности их состава и процесса производства. Проведен анализ главных геополитических событий и изменений, произошедших в 2022 г., и их влияния на рынок смазочных материалов (например, упомянутое ранее введение санкционных ограничений). В частности, описано влияние последних на рыночную динамику основного сырьевого компонента для производства смазочных материалов, а также его стоимость как в ретроспективе, так и ожидания на 2023 г. с учетом прогнозируемых объемов потребления на внутреннем и внешнем рынках. Дается краткая характеристика основных сегментов рынка смазочных материалов, а также анализируются ключевые бренды, присутствовавшие на рынке России в 2022 г., и изменение их состава в связи с последними событиями в отрасли. На основе результатов рассмотренных вопросов и проведенного анализа формулируется комплексный вывод о состоянии рынка смазочных материалов в России на текущий момент и перспективах его развития в 2023 г.

**Ключевые слова:** нефтегазовая отрасль, рынок смазочных материалов, тенденции развития, рыночные перспективы, санкции

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## Introduction

The export of petroleum products and the stability of the oil and gas sector in Russia are one of the key and most important aspects of the national economy (Bogdanova, 2018). According to official statistics, the share of petroleum products in the structure of Russian export was 29% in 2021, and in 2015–2016 this figure was more 50%.<sup>1</sup> At the same time, the events of recent years have had a significant impact on the functioning of the industry and the lubricants market (Lizovskaya, 2021; Pulyaev, Khudashova, 2016; Tsvetkov, Maksimov 2020).

As a result, certain preconditions for changes in the conjuncture of this market had formed. This research is aimed to identify the main market trends in the lubricants market in 2023. Among the tasks of the research, the following ones can be distinguished:

1. Define the content of the concept of “lubricants».
2. Briefly describe the current market situation.
3. Analyze the main changes that occurred in the market in 2022 and their impact on the lubricants market.
4. Formulate the main trends in the development of the market.

Within the research both general scientific methods of induction and deduction, analysis and synthesis, as well as methods of comparison, observation, expert evaluation and the surveys of the social research were used. Methods of economic and statistical analysis, as well as the graphical method, were widely used, too.

The statistical data of foreign trade of the Russian Federation, forecasts of the Ministry of Economic Development, official data of Rosstat were used as the source base of the research. In terms of the analysis of the lubricants market, open data from the Argus pricing agency, as well as materials from independent assessments and studies, were used.

In 2022, the Russian economy faced unprecedented economic pressure caused by the impact of sanctions imposed by the countries of the European Union, the United States of America and a number of other countries. The restrictions affected a significant number of sectors of the economy and industry, including the oil and gas sector, as it was mentioned in the research published by M.V. Chernyaev and D.L. Paleev (Paleev, Chernyaev, 2022).

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<sup>1</sup> See: Calculated by the author on the basis of EMISS data (Unified Interdepartmental Information and Statistical System). Retrieved March 20, 2023, from <https://fedstat.ru/indicator/37393>; Rosstat — Official statistics. Retrieved from <https://rosstat.gov.ru/folder/10705>

In this regard, the 6<sup>th</sup> package of sanctions is of particular interest within the framework of the ongoing research, which, along with other measures, includes an “oil embargo”, which provides for a ban on the import of oil and petroleum products of Russian origin. The package of sanctions was adopted in early June 2022, and the ban on the purchase of petroleum products began to take effect on February 5, 2023.

Imposition of the sanctions and general geopolitical situation have had a significant impact both on the economy of the Russian Federation (directly) and indirectly on most of other countries in the world, as well as on global commodity markets. As a result, significant fluctuations in the lubricants market also occurred (hereinafter under the terms “lubricants”, mineral-based oils of various purposes are considered: motor oils, industrial oils, marine oil, etc. Greases and auto chemical products and other process fluids will not be included in this concept within the framework of the research).

### **Results of the research**

In particular, let's consider the price dynamics of the most important raw material component, which has a share of 75 % or more in the finished product — base oil. The remaining fraction in the composition of lubricants is a special additive that gives the oil necessary performance characteristics. In turn, the base oil is a product of oil refining (In particular, gas oil) (Petrovsky, 2020). Depending on the method of production, viscosity index, amount of sulfur and other indicators, base oils are divided into 5 main groups (according to API — American Petroleum Institute).<sup>2</sup>

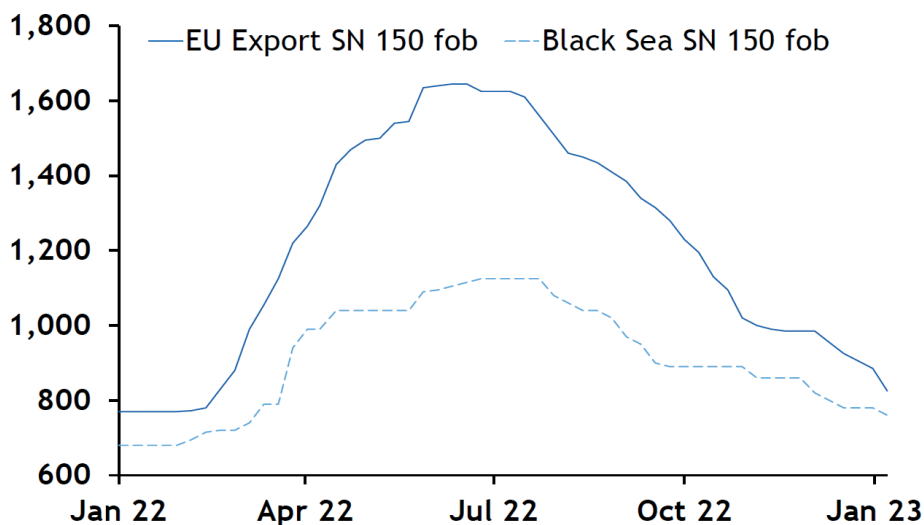
Within the framework of this article, base oils of groups 1–3 will be considered, which are directly obtained from oil and are most widely used in the production of lubricants. The base oils of the higher groups are completely synthetic and are obtained by chemical means, their share in the total volume of base oils is insignificant.

Since the prices of base oil directly depend on the port of shipment and the product group, we will consider the most typical average quotes of common base oils of the 1st group (widely represented on the Russian market and quite massively used in production) with a delivery basis in the ports of the Black and Baltic Seas. Deliveries via the Baltic Sea ports are the main export channel.

The dynamics of quotations for the remaining product groups will closely correlate with the selected indicators presented in the graph below (Figure 1):

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<sup>2</sup> See: According to the marketing materials of LUK-International and Gazpromneft Lubricants: what is engine oil made of? // Zen | Blogging platform. Retrieved March 20, 2023, from <https://dzen.ru/a/Y-IP9VUGwUHNPUln>; Marketing materials // Engine oils Gazpromneft (Gazpromneft) [Electronic resource]. Retrieved March 20, 2023, from <https://gazpromneft-oil.ru/ru/brand/marketing>



**Figure 1.** Base oil dynamics

Source: Argus independent price agency. Retrieved March 20, 2023, from <https://www.argusmedia.com/ru/white-papers?language = Russian>

As can be seen from the graph above, there has been a sharp increase in quotations since the spring of 2022 approximately, which means an increase in prices for base oil, and as a result, an increase in the cost of manufactured products.

The increase in prices was directly related to the expected shortage of products on the market, changes and increase in the cost of logistics caused by existing increased demand from consumers and their further expectations because of sanctions.

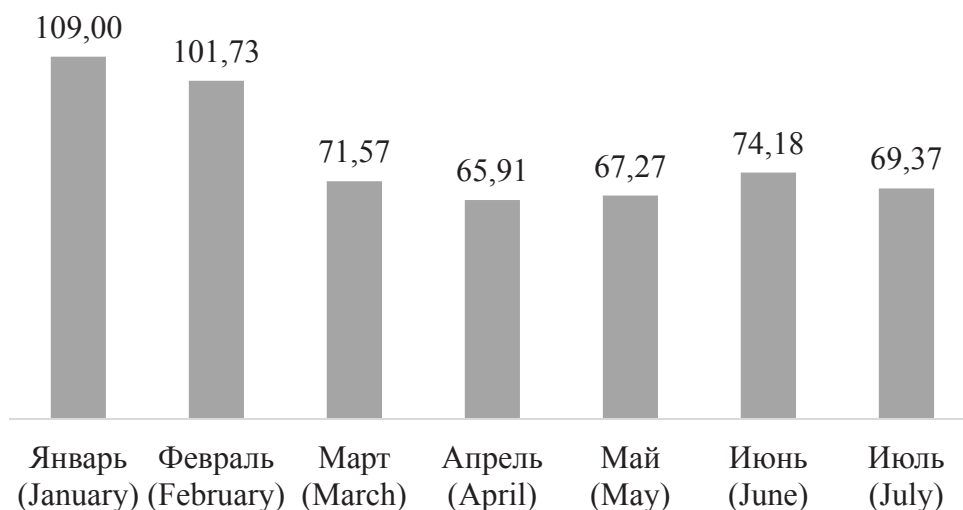
The dynamics of prices for finished products changed in the same patterns as well, while most manufacturers of lubricants managed to gain increased profitability due to favorable macroeconomic situation. Basically, it was possible primarily due to realization of product inventories with low costs.

It should be noted that, in general, the turnover period of inventories in this industry is quite long and can be equal to 3 months or even more depending on the type of products and the specifics of production and logistics schemes. At the same time, the dynamics of prices for finished products, as it was established earlier, is closely related to the dynamics of quotations of raw materials. These factors must be considered when analyzing the marginality of sales and pricing management in a specific period.

Additionally, it is worth considering that finished lubricants have a sufficiently long shelf life and, accordingly, the period of storage in a warehouse, which allows to manage the cost in certain situations (Smirnov, 2019).

D.M. Petrashova (Petrashova, 2018) also comes to the corresponding conclusions (described above) in her research of the lubricants market. There is a close correlation of price and cost, which is associated with the dynamics of the price factor. At the same time, the rates of change in cost and price, despite the general dynamics, differ, which is explained by the influence of inventory sales. This is clear from the dynamics of profitability of sales over the reviewed periods.

Since the end of the summer of 2022, there has been a decline in the quotations of base oils, which is associated with an oversupply in the market and a continuing decline in export volumes caused by meeting of extra demand of previous periods and formation of necessary secure stocks (mostly by consumers from European countries) before the sanction's restrictions come into force. The data is confirmed by the relevant statistics of the Argus agency (Figure 2).



**Figure 2.** Dynamics of Russian export of base oils, ths. tons

Source: Argus independent price agency. Retrieved March 20, 2023, from <https://www.argusmedia.com/ru/white-papers?language=Russian>

As can be seen from the graph presented above, at the current moment the recovery of export volumes to the level of 2021 seems difficult, since an instant reorientation of export directions is impossible: the most promising are Asian markets characterized by high competition from Asian and international brands (it is logical to assume that manufacturers who left the Russian market under the influence of sanctions are also reorienting volumes to alternative markets).

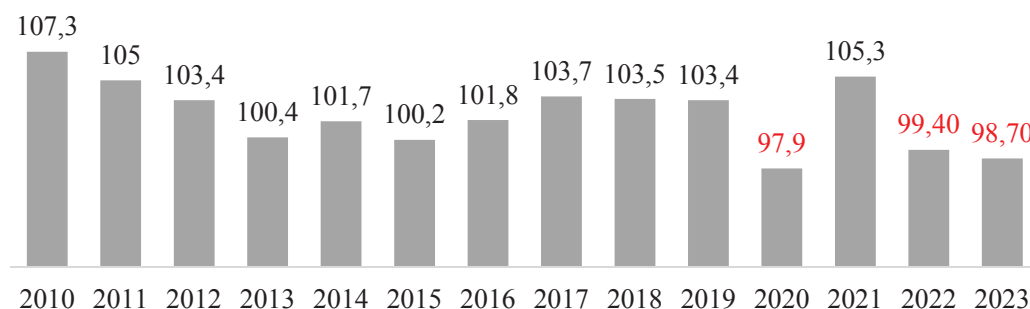
In this connection, the volumes intended for export are primarily directed to the domestic market and it led to a surplus of raw materials in the domestic market. This is an additional factor of downward pressure on prices along with the global trend.

In turn, the domestic market cannot fully “absorb” additional volumes of raw materials and finished products due to the general decline in the level of industrial production and overall consumption.

Thus, according to Rosstat and the assessment of the Ministry of Industrial Trade of the Russian Federation,<sup>3</sup> the industrial production index will be 99.4 % in 2022 and 98.2 % in 2023 correspondingly (Figure 3).

<sup>3</sup> Ministry of Economic Development: this year the decline in industrial production in the Russian Federation will be 1.8 %, in 2023–1.3 %. Finmarket.ru. Retrieved March 20, 2023, from <http://www.finmarket.ru/news.asp?id=5810029>





**Figure 3.** Dynamics of the industrial production index in % compared to the previous year

Source: built by author based on data from Rosstat and Ministry of economic development. Retrieved from: Retrieved March 20, 2023, from <https://rosstat.gov.ru/folder/10705>; <http://www.finmarket.ru/news/5810029>

Thus, the accumulated value of the index by the fact of 2021 will be -2 %. The magnitude of this decrease is the minimum value of losses in the volume of demand for industrial oils in Russia (used directly in manufacturing industries) (Baranovsky, 2020; Lizovskaya, 2021).

As for the PVL segment (Passenger vehicle lubricants), consumption is expected to decrease in this segment due to limited car supplies and negative trends in the car market in general, which is primarily due to the impact of sanctions’ restrictions. For the above reasons, a similar decrease is expected in the consumption of transmission oils.

The CVL (Commercial vehicle lubricants) segment looks the most promising: in this case, because of the development of alternative supply channels (and parallel import) of goods and services and the corresponding change in logistics schemes in general, even an organic increase in the consumption of lubricants is possible.

An additional factor of pressure in the market is the continued presence of foreign brands in the lubricants market in Russia.

Despite the withdrawal of major international players from the Russian market (In particular, the “Shell” brand, which sold its assets to produce lubricants and a network of gas stations to PJSC “LUKOIL”) <sup>4</sup>, their presence in the market is maintained through the implementation of parallel import schemes. Among other brands, such brands as Castrol, Mobil, Total also announced their departure.

There is also the entry of new players into the market from Asia and other countries that previously occupied a small share or were not present at all in the Russian market.

As a confirmation, let’s turn to the infographic of the top 15 brands of motor oils in 2022 (as one of the most significant segments of the lubricants market). According to the research, the first place is occupied by the “LUKOIL” brand (13.3 % share), the second and fourth places are occupied by “Shell” brands

<sup>4</sup> LUKOIL has closed a deal to acquire SHELL downstream assets in Russia [Electronic resource]. URL: <http://lukoil.ru/ru/PressCenter/Pressreleases/Pressrelease/lukoil-zakryl-sdelku-po-priobreteniiu> (accessed: 04.23.2023).

(11.7 %), “Mobil” (5.9 %) and “Castrol” (4.4 %) respectively. As you can see, foreign brands retain their positions in the market in 2022, despite the absence of deliveries from official suppliers<sup>5</sup>. In the same research, there is an increase in demand for the Korean brands “Kixx” and “ZIC”. Despite maintaining approximately the same market share, sales of oils of these brands increased by 18 % and 36 % respectively in 2022.

It is also worth noting the increased competition from the other Russian lubricants producers. Thus, in certain sectors of the lubricants market, the shares of imported brands tend to be occupied by previously not widely known Russian companies (Mamykin, 2023, Stepankov, 2022). For example, lubricating oils under the brand “TAIF” are actively increasing their presence on the Russian market in terms of supplies for lubricants for gas turbines (Stepankov, 2022). This confirms the previously put forward thesis about increased competition in the market.

The leading positions of Russian lubricants producers are quite understandable: in addition to the increase in demand because of sanctions, the high quality of lubricants produced, and of motor oils particularly, is confirmed in the research conducted by Shcheglov G.V. and Maslova S.S. (Shcheglov, Maslova, 2022). Comparable oils were analyzed (the most popular among car users) under the brands “Shell”, “LUKOIL”, “TOYOTA”, “Sintec” and “JB German Oil”. According to the results of the study, LUKOIL brand oil is one of the most competitive compared to imported analogues (Shcheglov, Maslova, 2022).

Absolutely similar conclusions were obtained in recent research by a team of authors from Belarus. In their research motor oils under the brands “Motul”, “LUKOIL”, “Shell” and “Naftan” were compared in terms of use in cars “Skoda Rapid” (Pivovarchik, 2016). According to the results of the analysis motor oils under the brands “Motul” and “LUKOIL” were recommended for use. Similar results were obtained in an earlier study when comparing LUKOIL brand oils and Belgian “Ursa” (Pivovarchik, 2019).

Probably, that was the effect expected from the program of import substitution introduced in 2018, which was described in details in the research by M.V. Chernyaev and A.V. Korenevskaya (. Chernyaev, Korenevskaya, 2018)

## Conclusion

The lubricants market plays a significant role in the economy of the Russian Federation, being an important export commodity, especially considering the sales volume of the initial raw material component — base oil. Moreover, Russian domestic market is also one of the largest in Europe.

Nevertheless, because of the economic and geopolitical events of recent years, there have been significant changes and fluctuations in the market

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<sup>5</sup> TOP-15 brands of motor oils. Rating of demand among Russians // Zen | Blogging platform. Retrieved March 20, 2023, from URL: [https://dzen.ru/a/Y-yam0KDSHmv\\_SG2](https://dzen.ru/a/Y-yam0KDSHmv_SG2) (accessed: 03.21.2023).



of lubricants and related raw materials market. It is worth noting the decline in sales of base oils for export and the withdrawal of major European and American brands from the Russian market. This leads to additional risks for manufacturers of lubricants, especially considering some features of the industry described.

Based on the results of the research, the following main trends of the lubricants market in Russia in 2023 and further in can be formulated:

- oversupply of the market with raw materials for production.
- involvement of stocks with high cost against along with declining price indicators.
- decrease in demand for lubricants caused by fall in volumes of production and recession in certain industries.
- increased competition in the market due to the development of new brands and the establishment of a parallel import scheme.

To overcome the challenges that have arisen in the Russian market in efficient way, manufacturers of lubricants need comprehensive measures to improve the efficiency of their operating activities. They must include not only technological, but also economic, as well as marketing aspects that should take into account accumulated domestic and foreign experience.

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**Bio notes / Сведения об авторах**

*Maxim V. Chernyaev*, Candidate of Economic Sciences, Associate Professor, Deputy Dean Faculty of Economics, RUDN University. ORCID: 0000-0003-4638-5623. E-mail: [chernyaev-mv@rudn.ru](mailto:chernyaev-mv@rudn.ru) SPIN-code: 1500–2438

*Черняев Максим Васильевич*, кандидат экономических наук, доцент, зам. декана экономического факультета, Российский университет дружбы народов. ORCID: 0000-0003-4638-5623. E-mail: [chernyaev-mv@rudn.ru](mailto:chernyaev-mv@rudn.ru) SPIN-код: 1500–2438

*Artem M. Kudryashov*, Postgraduate Student, Department of National Economics of the Economic Faculty, RUDN University. ORCID: 0000-0001-9482-7954. E-mail: [1142220373@rudn.ru](mailto:1142220373@rudn.ru) SPIN-code: 4035–0241

*Кудряшов Артем Михайлович*, аспирант кафедры национальной экономики экономического факультета, Российский университет дружбы народов. ORCID: 0000-0001-9482-7954. E-mail: [1142220373@rudn.ru](mailto:1142220373@rudn.ru) SPIN-код: 4035–0241