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Research paper

Oil Sector of Russia: Current Situation and Trends

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Abstract

The article reviews practical experience and some theoretical aspects of the functioning of the oil sector in the Russian economy, analyzes the current situation in the large oil and gas fields of the Russian Federation, reveals negative and positive factors regarding the development of the oil sector in the national economy. Expert assessments of the state and prospects for the oil sector development are given based on the results of the analysis of its main indicators.

Keywords: *Oil sector, oil market, oil and gas fields, oil indicators.*

1. Introduction

Development of the "resource" countries' economy is largely determined by the state of the oil industry. However, the long-term forecast of the Ministry of Economic Development of the Russian Federation reflects a decline in prices for petroleum products, and, consequently, a decrease in the rate of growth in hydrocarbon production [1]. Thus, according to the Concept of Long-Term Social and Economic Development of the Russian Federation until 2020, the share of revenues from the sale of oil and gas in the federal budget will be significantly lower than the level of their transportation after 2016 (3.7% of GDP) [2].

To date, the oil industry of the Russian Federation plays an important role in the development of not only the fuel and energy complex of the country, providing stability of the state budget, but also the stability and competitiveness of the economy. In addition, the legal framework used, its complexity and mobility, should contribute to the development of domestic and international oil markets, as there are subject-object legal relationships on the oil market, as well as in other industrial markets, which are determined by the specifics of the activity.

Issues related to the oil market research are reflected in many works of foreign and domestic scientists, among which there are scientific works by Daniel Ergin, Donna Liba, Stephen Lieb, Edera L.V., Filimonova I.V., Provornoy I.V., Korzhubaeva A.G., Sokolova I.A., Dunaeva V.F., Shpakova V.L., Epifanova N.P., Lyndina V.N., Vertlyugina D.E., Binatova Yu.G., Pelmeneneva A. A., Ushvitskiy L.I. and many others [3-17].

Basic interpretations of the understanding of the term "oil market" are presented in Table 1, characterizing the oil market from three positions: as a system, as an institution and as a process.

Table 1: Theoretical approaches to defining the "oil market"

Author	Definition
A.V. Yarovaya	The oil market is one of the most important, life-supporting markets, the level of development of which largely determines the welfare of the country and its position in the world community.
D.A. Kupryashina	The oil market is a part of the world economy in which futures contracts (oil shares) are traded, between countries, international corporations, companies, and other market participants, trades occur using "paper oil", crude oil, as well as transportation rights and processing of oil products.
L. Razumnova, N. Svetlov	The oil market is the trade in derivatives, usual futures for various grades of oil. Trades in commodity contracts are conducted, in the majority, on commodity exchanges. Many major stock exchanges have special commodity sections, where these instruments are traded.
F.B. Botasheva	The oil market is a standard fixed-term contract for the purchase and sale of a basic asset, at the conclusion of which the parties (the seller and the buyer) agree only on the price level and the delivery time. The remaining parameters of the asset (quantity, quality, packaging, labeling, etc.) are stipulated in advance in the specifications of the exchange contract. Parties have obligations to the stock exchange up to the execution of the futures.
N.P.Savina	The oil market is an institution that ensures the functioning of the oil purchase and sale spheres.
Zh.Zh. Khudoyanatov	The oil market is a set of economic conditions in which buyers and sellers interact to implement mutually beneficial trade oil transactions.
E.S. Vasilenko	The oil market is one of the basic, life-supporting markets of the national economy, the level of development of which largely determines the economic power of the country and its geopolitical role in the world community.
T.A. Malova	The oil market is a global market, moreover, prone to the formation of "bubbles", and even countries that are able to satisfy independently their own needs for oil cannot be isolated from its influence".
Yu.A. Shcherbinin	The world market for oil and petroleum products is a very sophisticated and susceptible system.

Compiled on the basis of sources [10, 12, 13, 16, 20, 26].

2. Results

It should be noted that the oil industry is closely connected with most branches of the national economy and moreover, it has a significant impact on these sectors and the economy of the country as a whole. As can be seen in Fig.1, the oil industry occupies more than 52% of the total Russian economy (Fig. 1).

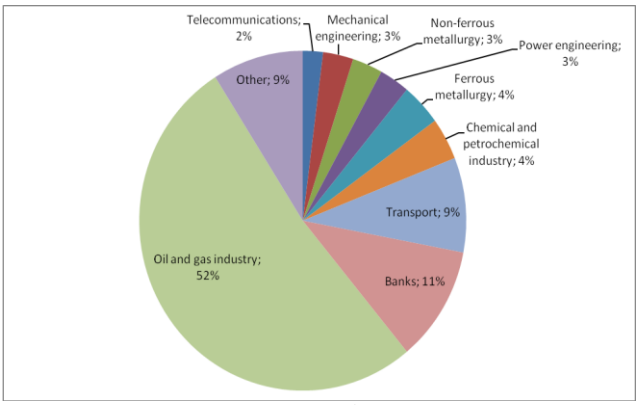

Fig.1: Major industries of the economy [18]

What is the current situation in the oil industry in the Russian Federation?

2,352 oil fields are being developed on the territory of the Russian Federation, among them 12 are unique and 83 are large [19].

Five of 12 unique deposits are located in the Khanty-Mansiysk Autonomous District, three -in the Krasnoyarsk region, three in the Yamal-Nenets Autonomous District and one in the Republic of Tatarstan.

It should be noted that deposits that are a cluster of hydrocarbons (oil, gas and gas condensate) in one or several deposits related geographically, the generality of the geological structure and the oil and gas potential, which are the largest recoverable reserves: more than 300 million tons of oil or 500 billion m³ of gas, are called unique deposits.

Samotlor is the largest unique deposit in Russia, its estimated oil reserves are equal to 7.1 billion tons, and the average daily production is about 65,000 tons. The deposit is situated in the Khanty-Mansiysk Autonomous District; its development is being conducted by the oil company Rosneft [20].

Priobskoye is the largest Russian oil field by average daily oil production, which is located also in the Khanty-Mansiysk Autonomous District. Oil production is equal to about 110 thousand tons daily, and explored reserves are accounted for about 5 billion tons. Production is carried out by Rosneft, Gazprom Neft, Sibneft-Yugra.

Prirazlomnoye, Krasnoleninskoye and Salymskoye are 3 more deposits of the Khanty-Mansiysk Autonomous District, which belong to the unique oil fields of Russia. The explored oil reserves are equal to 0.4-1.1-0.5 billion tons. The average oil production per day at the Prirazlomnoye field is 20.5 thousand tons, at Krasnoleninskoye - 21.7 thousand tons, at Salym - 2,2 thousand tons. 6 oil companies are engaged in production at the Krasnoleninskoye field, while only Rosneft is engaged on Prirazlomnoye and Salymskoye.

In addition to the 5 unique oil fields in the Khanty-Mansi Autonomous District, there are 2 deposits called Lyantorskoye and Fedorovskoye which are among the five largest deposits in Russia in terms of total oil reserves. The initial reserves of raw materials here were equal to 2 and 1.8 billion tons, respectively. However, deposits have been developed since the 1970s, so the residual oil reserves at the Lyantorskoye field today are about 320 million tons, and at Fedorovsky field - about 150 million tons. The average daily volume of production at the Lyantorskoye field is 26 thousand tons, of the Fedorovsky field - 23 thousand tons.

Romashkinskoye is the largest oil field in the Urals and the Volga region and the European part of Russia as a whole. There is a deposit in the Republic of Tatarstan, and the total geological reserves of oil are about 5 billion tons. About 3 billion oil was extracted from the field during the years of operation. Now the average daily production is about 41 thousand tons. The deposit is being developed by Tatneft.

Two unique deposits of the Yamal-Nenets Autonomous District are classified as developed ones, one of them is the Urengoy gas field, with a production rate of about 1,000 tonnes per day. The Russkoye and the East Messoyakhskoye fields are the most promising in the Russian Federation, and the total geological reserves of these deposits are about 2 billion tons. The process of the development of these fields began in 2015-2016.

The Vankor oil field is the largest in the Krasnoyarsk region. About 50.5 thousand tons of oil is produced here daily, and the reserves are about 450 million tons. The other 2 deposits of Krasnoyarsk region - Yurubcheno-Takhomskoye and Kuyumbinskoye are small, their reserves amount to about 250 million tons of oil (Fig.2).

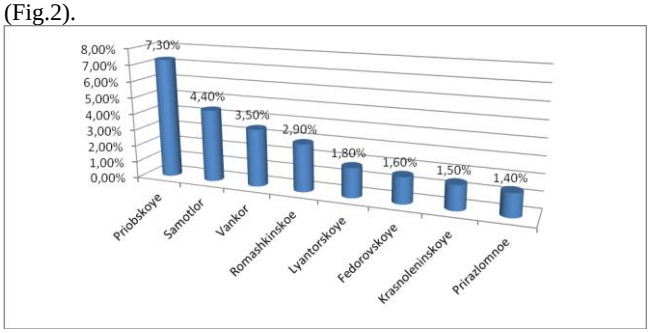

Fig.2: The largest oil fields in Russia, % of the total shares [21]

Thus, Western Siberia is recognized as the largest oil and gas macroregion of the Russian Federation. The significant part of natural gas and oil (60% of the total country's production) is extracted in the Yamalo-Nenets and Khanty-Mansiysk autonomous regions.

Structural analysis of oil production in the macro-regions of the Russian Federation is presented in Fig.3.

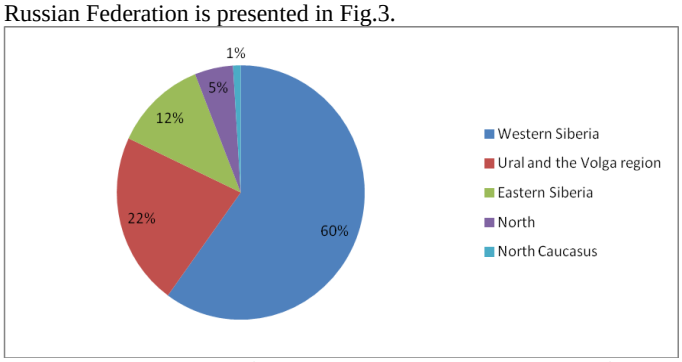

Fig.3: Structural analysis of oil production in the macro-regions of the Russian Federation [2]

The historical aspect of the Russian economy is that the oil industry is the basic source of income for the federal budget of the Russian Federation [2].

This fact allows Russia to occupy leading positions in the international market, maintain economic stability in the country and strengthen international relations with other states since oil is a key product of international trade [22]. There is another side: over the past five years, the fuel and energy complex of the Russian Federation has demonstrated unstable rates of growth in hydrocarbon production, upgrading of refineries and the development of transport infrastructure (Fig.4).

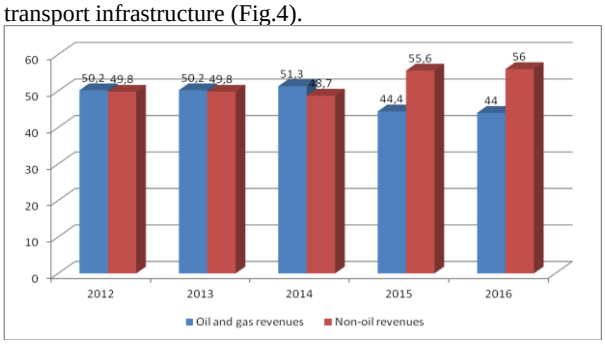

Fig.4: Rates of growth in hydrocarbon production, upgrading of refineries and the development of transport infrastructure

Let's consider the basic indicators reflecting a situation of the oil market of the Russian Federation.

Initially, we note that according to the experts the main factors of the instability of the "oil indicators" of the federal budget revenues are the instability of world oil prices, the volatility of the volume of oil exports, the drop in demand for hydrocarbon raw materials [23]. The volatility of the international situation, in turn, affects domestic production and export and refining of petroleum (Table 2).

Table 2: Indicators of oil production, export and refining, million tons [2]

Indicators	2014	2015	2016	Absolute change	The growth rate,%
Extraction	526.7	534.2	547.6	+20.9	104.0
Received for processing	289.1	288.2	284.5	- 4.6	98.4
Export	237.6	244.5	254.8	+17.2	107.2

Table 2 shows that the oil production increased by 20.9 million tons during 2014 – 2016. The growth rate is equal to 4%. In addition, there is a positive dynamics of exported oil. However, the volume of oil received for processing has a negative dynamics - a decrease of 4.6 million tons or 1.5%. The current situation demonstrates a weak upgrade of oil refining capacities (Fig.5).

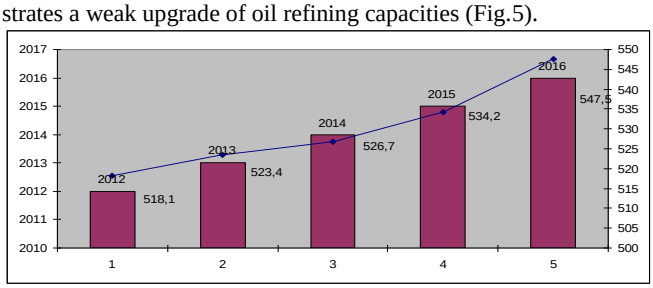

Fig.5: Oil and gas condensate production, mln tons [2]

The next indicator reflects the amount of income received from the delivered oil to the domestic market. This kind of information is provided by legal entities (except for small business entities) engaged in oil production (Table 3) [24].

Table 3: The volume of income received from delivered oil to the domestic market [2]

Revenue volume	2014	2015	2016	Absolute deviation		Relative deviation,%	
				2015/ 2014	2016/ 2015	2015/ 2014	2016/ 2015
Mln rub	2495829	269177	2821838	+195941	+130068	+7.9	+4.8

Based on the data given in Table 3, it can be concluded that the volumes of revenues received from the delivered oil to the domestic market have positive growth dynamics.

Also in Fig.6, you can see the forecast for the development of this sector in the form of a trend line if it develops in the same direction (Fig.6).

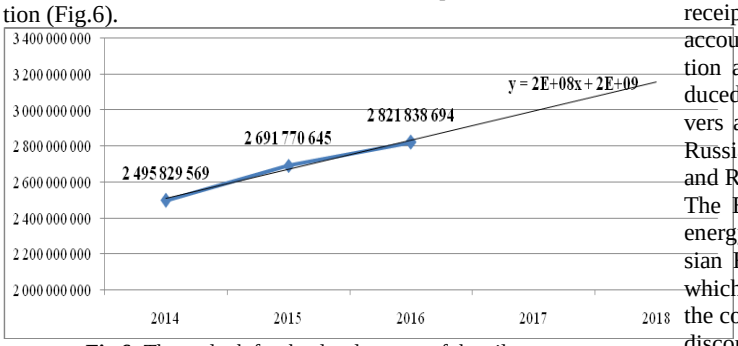

Fig.6: The outlook for the development of the oil sector

The next indicator reflects the volume of revenues received from the oil supply for export. Information is provided by legal entities (except for small business entities) engaged in oil production. This indicator equals 58% of the total exports of the Russian Federation.

Table 4: Indicators of the income volume received from exported oil [25]

Revenue volume	2014	2015	2016	Absolute deviation		Relative deviation,%	
				2015/ 2014	2016/ 2015	2015/ 2014	2016/ 2015
Mln rub	1562414	2099176	1824448	+536762	-274728	+34%	-13%

The information presented in Table 4 shows the spasmodic nature of the volume of revenues derived from the exported oil. Leaps are observed in 2015, where the share of funds increased by 34%, but in 2016 there was a decrease of 13%.

Another indicator that characterizes the state of the Russian oil market is the indicator of the full cost of oil production, presented below. This indicator is developed by oil producing enterprises. It should be noted that in oil production two complementary cost classifications are used - element-wise and cost-accounting ones. The actual cost estimate and the accounting calculation of the cost of oil production should be identical, both in terms of the cost elements composition, items of expenditure and their content (Table 5).

Table 5: The total cost of production (delivery) of a ton of oil [25]

The total production cost (supply)	2014	2015	2016	Absolute deviation		Relative deviation,%	
				2015/ 2014	2016/ 2015	2015/ 2014	2016/ 2015
tons	34 413,40	38 385,70	36 534,90	+3972,30	-1850,80	+11,5	-4,8

It can be seen that the most costly year was the year of 2015 - 38,385.70 tons, but in 2016 the funds for oil production went far less (by 4.8%).

The next indicator reflects the volume of the processed own oil belonging to the enterprise on the property right. Information is provided by legal entities (except for small business entities) engaged in oil processing (Table 6).

Table 6: The volume of processed own oil [25]

The volume of processed oil	2014	2015	2016	Absolute deviation		Relative deviation.%	
				2015/ 2014	2016/ 2015	2015/ 2014	2016/ 2015
Thous. tons	93758. 80	86535. 10	85196. 40	-7223.70	-1338.70	-7.7	-1.5

Based on the data in Table 6, it can be concluded that the volume of processed own oil is decreasing every year, in total, the volume of processed oil decreased by 9% compared to 2015.

3. Conclusion

It should be noted that the oil sector remains one of the most important components of the Russian economy, guaranteeing the country's energy and defense security and thereby ensuring the receipt of oil and gas revenues to the federal budget. Oil and gas account for more than 60% of the exports of the Russian Federation and about 30% of GDP [26]. 10.6 million barrels are produced on the territory of the Russian Federation daily, which covers about 12% of the world's oil needs. For many decades, the Russian economy is extremely dependent on hydrocarbon exports and Russia is still using its position as an oil supplier.

The European countries of the EU are working to reduce their energy dependence on Russia, and since the mid-2000s, the Russian Federation has been in constant conflict with states, during which the supply of oil to Europe ceases or decreases. In addition, the construction of large gas pipelines (for example, Nabucco) was discontinued.

To date, as before, the EU countries have not got rid of energy dependence, which affects the price performance of oil, where in the issues of fair oil prices, until now, there is no consensus. Thus, the Russian oil sector, in the current situation, provides an opportunity to finance and develop various spheres of the country's eco-

nomic activity, including a more significant social sphere, and accumulate foreign exchange reserves.

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