

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Economics



Bachelor Thesis

**Analysis of economic situation in Russian Federation –
Case study of crude oil sector**

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BACHELOR THESIS ASSIGNMENT

Artem Kamaliev

Economics and Management

Thesis title

Analysis of economic situation in Russian Federation – Case study of crude oil sector

Objectives of thesis

The aim of the thesis is to examine the role and place of Russia in the global oil market. The main objectives is to examine the current state of the world oil market, to reveal to the market the main buyers and sellers. Additional aims are to define the role of the oil sector in the Russian economy, to analyze the rate of development of the oil industry and to analyze the characteristics, problems and prospects of Russian oil exports to the world oil market.

Methodology

The thesis will consist of two parts. The first part is theoretical part and the second one is practical part. The thesis will use decriptive and comparative methods of research.

The proposed extent of the thesis

40 – 60 pages

Keywords

Russia, economic growth, International relations, restrictions

Recommended information sources

Charles Jr. Wolf, Thomas Lang. Russia's Economy: Signs of Progress and Retreat on the Transitional Road.
Michael Alexeev, Shlomo Weber. The Oxford Handbook of the Russian Economy.



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Declaration

I declare that I have worked on my bachelor thesis titled "Analysis of economic situation in Russian Federation – Case study of crude oil sector" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on _____

Artem Kamaliev

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I would like to thank Assoc. Prof. Mansoor Maitah, Ph.D. et Ph.D. for his advice and support during my work on this thesis.

Analýza ekonomické situace v Ruské Federaci – Případová studie surového ropného sektoru

Souhrn

Ropa je nejdůležitějším zdrojem energie na světě, což představuje 33% celosvětové spotřeby energie.

Komplex olej je strategicky důležitý prvek v ekonomice Ruska a má velký význam v sociálně-ekonomického rozvoje země.

Výsledky činnosti v ropném průmyslu jsou základem základ pro vytvoření federálního rozpočtu, zajistit stabilitu národní měny. Existuje přímá závislost mezi těmito výsledky a jak úspěšně následky globální finanční krize a hospodářské sankce, budou překonány. V této souvislosti zkoumání problémů a vyhlídky ekonomické situace v Ruské federaci na trhu s ropou se zdá být obzvláště důležité.

O něco méně než 80% prokázaných zásob ropy byly zaúčtovány osmi zemí od 1. ledna 2015. Šest z těchto zemí jsou členy OPEC, a to pouze dva (Kanada a Rusko) nejsou členy OPEC.

Rusko je na 6. místě v ropných zásob a je na 2. místě po Saúdské Arábii v produkci ropy.

Mezi hlavní problémy ruského vývozu ropy na světový trh lze připsat jako závislost Evropské unie od hlavního dovozce ropy a zvýšená konkurence na evropském trhu v dodávkách ropy. Situace se zhoršila vyššími náklady, ve srovnání s většinou ostatních vyvážejících zemí a daní, které vlastně dělá ruský ropný uncompetitive, vede k poklesu vývozu v základním scénáři a negativní dopad na rozpočtové příjmy, zejména v podmínkách nízkých světových cen.

Klíčová slova: Ruský hospodářský růst, mezinárodní vztahy, omezení

Analysis of economic situation in Russian Federation – Case study of crude oil sector

Summary

Oil is the most important source of energy in the world, accounting for 33% of global energy consumption.

The oil complex is a strategically important element in the economy of Russia and has great importance in the socio-economic development of the country.

The results of the oil industry activities are the basis of the base for the formation of the federal budget, ensuring stability of the national currency. There is a direct dependency between these results and how quickly and successfully the consequences of the global financial crisis and the economic sanctions, imposed by the countries of Western Europe and North America, will be overcome. In this regard, studying the problems and prospects of the economic situation in the Russian Federation in the Crude Oil market appears to be especially important.

A little less than 80% of proven oil reserves were accounted for eight countries as of January 1, 2015. Six of these countries are members of OPEC, and only two (Canada and Russia) are not members of OPEC.

Russia is on the 6th place in oil reserves and it is on the 2nd place after Saudi Arabia in oil production.

The main problems of Russian oil exports to the world market can be attributed as a dependency from the European Union from the main importer of crude oil, and increased competition on the European market in the supply of oil. The situation is worsened by higher costs, compared to most other exporting countries, and taxes that actually makes Russian oil uncompetitive, leads to a decrease in exports in the baseline scenario and a negative impact on budget revenues, especially in conditions of low world prices.

Keywords: Russia, economic growth, international relations, restrictions

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1 Introduction

Oil is the most important source of energy in the world, accounting for 33% of global energy consumption. It has high energy content and it is convenient for transportation, which makes it almost indispensable energy source.

The oil V of a substantial amount of the world's oil reserves in Russia, but also because of the historical development of the domestic industry. The results of the oil industry activities are the basis of the base for the formation of the federal budget, ensuring stability of the national currency. There is a direct dependency between these results and how quickly and successfully the consequences of the global financial crisis and the economic sanctions, imposed by the countries of Western Europe and North America, will be overcome. In this regard, studying the problems and prospects of the economic situation in the Russian Federation in the Crude Oil¹ market appears to be especially important.

¹ Smirnov DB The institutional structure of the oil complex - Trends and Challenges // Business Strategies. - 2015. - No9 (17). - p. 37

2 Objectives and Methodology

2.1 Objectives

The purpose of final qualifying work is to analyse the economic situation in the Russian Federation on an example of the crude oil market.

To achieve this goal in the work it is necessary to achieve the following objectives:

- Examine the main trends in the global oil production;
- Characterize the main players in the global crude oil market;
- Make an analysis of the rate of development of the oil industry;
- Identify the problems of Russian oil exports to the world market in terms of sanctions;
- Consider the prospects of Russian oil exports to the world market.

The object of the study is the crude oil market in the Russian Federation.

The subject of research is the problems and prospects of development of the industry of crude oil production in Russia.

2.2 Methodology

Next research methods were used in the final qualifying work: comparative, economic and statistical analysis, synthesis.

Final qualifying work consists of an introduction, two chapters, conclusion, list of references, applications. The first chapter describes the development trend of the world oil production and the characteristics of the main players in the global crude oil market. The second chapter analyses the pace of development of the oil industry, reveals the problems of Russian oil exports to the world market in terms of sanctions and determines prospects of Russian oil exports to the world market.

3 Literature Review

3.1 Analysis of the current state of the world oil market

3.1.1 Trends in the development of world oil production

Oil and its processing belong to a basic sector of the Russian economy, as well as the most important export resource of the country. Every year, Russia exported more than 200 million tons of crude oil. According to the information from BusinessStat this figure could increase to 257.7 million tons by 2017. Thus, the problem becomes apparent, that the Russian economy is dependent on the dynamics of world oil prices. About 80% of all foreign investments, which are coming into Russia, are concentrated in the oil and gas sector. The dependence of the Russian economy on world oil prices is being strengthened in the conditions of Russia's accession to the WTO as a result of the need for unification of the world and domestic energy prices. In such circumstances, it becomes especially important to study the factors and trends in the global oil market². Global demand for energy continues to grow due to population growth, but also due to economic wealth creation, which allows consumers to increase the consumption of more energy-intensive products in developing countries. A little less than 80% of proven oil reserves were accounted for eight countries as of January 1, 2015. Six of these countries are members of OPEC, and only two (Canada and Russia) are not members of OPEC. The world leader of proven oil reserves is Venezuela (mostly due to severe / bituminous oil). The leaders in light oil reserves are the Middle East countries - 47.7% of proven oil reserves.

World oil reserves by countries are presented in the Table No. 1.

² E.A. Mukaydeh A. Mukaydeh R.A. The world oil market: current state and forecasts of [electronic resource]. - Access: <http://online-science.ru/userfiles/file/yodg4i37a8wnkvzgz1lagn9vwixnbijn.pdf> (reference date 02/25.2016)

Table No.1: Global oil reserves by country at 01.01.2015

Country	Oil reserves, bln.	% share of total
Venezuela	298,3	17,5
Saudi Arabia	267,0	15,7
Canada	172,9	10,2
Iran	157,8	9,3
Iraq	150,0	8,8
Russia	103,2	6,1
Kuwait	101,5	6,0
UAE	97,8	5,8
United States	48,5	2,9
Libya	48,4	2,8
Nigeria	37,1	2,2
Kazakhstan	30,0	1,8
Qatar	25,7	1,5
China	18,5	1,1
Brazil	16,2	1,0
Remaining countries	127,3	7,5

Source: BP Statistical Review of World Energy 2015 [electronic resource]. - Access mode: <http://csis.org/event/bp-statistical-review-world-energy-2015> (Reference date 02/25/2016)

The situation in the structure of the oil reserves of the countries has not changed much in recent years. Leadership still retains Venezuela, which has increased its reserves since 2000 by almost 4.5 times due to the oil-bearing Orinoco Belt heavy and extra-heavy oil³. It should be noted that the proven reserves of internationally accepted classification does not reflect the overall oil reserves that can be recovered in the long run. Proven crude oil reserves - is the estimated amount of oil that can be recovered in the future from already known reservoirs, taking into account existing technology and current economic situation, with the use of geological and engineering data. Russia is on the 6th place in oil reserves and it is on the 2nd place after Saudi Arabia in oil production. US, whose growth rates of oil production are record in recent years, are almost on a par with Russia. For example, oil production in the US increased by 15.9% in 2014, while oil production in Russia increased

³ TEK Russia in 2014 [Electronic resource]. - Access mode: <http://ac.gov.ru/files/publication/a/5451.pdf> (Reference date 02/25/2016)

only by 0.6%. Oil production by the largest oil-producing countries is presented in the Table No. 2.

Table No. 2: Oil production by the largest oil-producing countries, million tons

Country	2012	2013	2014	% of world production
Saudi Arabia	549,8	538,4	543,4	12,9%
Russia	526,1	531,0	534,1	12,7%
United States	394,7	448,5	519,9	12,3%
China	207,5	210,0	211,4	5,0%
Canada	182,6	194,4	209,8	5,0%
Iran	177,3	165,8	169,2	4,0%
UAE	154,9	165,7	167,3	4,0%
Iraq	152,5	153,2	160,3	3,8%
Kuwait	154,0	151,5	150,8	3,6%
Venezuela	139,3	137,9	139,5	3,3%

Source: BP Statistical Review of World Energy 2015 [electronic resource]. - Access mode: <http://csis.org/event/bp-statistical-review-world-energy-2015> (reference date 02/25/2016)

After analyzing the dynamics of world oil production, it can be concluded that Saudi Arabia, Russia, the United States, Iran, China, Mexico, Canada, the United Arab Emirates and Venezuela are the world's largest oil producing countries. A number of major international oil companies present on the world market of oil and oil products at the moment. The leader in oil production is the oil company SaudiAmarco (Saudi Arabia), the companies NIOC (Iran) and ExxonMobil (US) are following it⁴. Data above shows the extraction of crude oil, shale oil, heavy oil, oil sands and gas condensate⁵. The United States has become the largest oil producer due to increased oil production in the shale deposits, beating Saudi Arabia and Russia. Russia has continued to maintain almost 12% of world oil production. Oil production in Iran has decreased substantially as a result of international sanctions imposed in 2011. However, the weakening these sanctions, in January 2014, has helped Iran to return to growth. Restoring growth continues to occur in Iraq, despite the new military conflict⁶.

⁴ Korotin A.S. world oil market structure: the nature and current trends // Volga trade and economic journal. - 2014. - № 4 (38). - p. 68.

⁵ Oil, global view [electronic resource]. - Access mode: <http://vseonefti.ru/neft/global-oil.html> (reference date 26.02.2016)

⁶ TEK Russia in 2014 [Electronic resource]. - Access mode: <http://ac.gov.ru/files/publication/a/5451.pdf> (reference date 26.02.2016)

Sustainable excess of oil supply over demand has emerged on the world oil market in recent years, which has led to a significant reduction in world prices for this commodity. The rapid increase in US shale oil production was the main factor in the growth of global supply, which occurred due to the use of new production technologies and high oil prices prevailing in previous years⁷. At the same time, OPEC, despite the decline in prices, declined from reducing the quota of oil production in the framework of a cartel by going to the policy of conservation of its share of the world oil market. As a result, the average price for Russian oil of the Urals grade fell to 51.2 USD / Bbl. in 2015, which is almost half (47.6%) lower than the average level of the previous year (Table No. 3).

Table No. 3: World oil prices in 2012-2015, USD / bbl.

Index	2012	2013	2014	2015				
				Q1	Q2	Q3	Q4	Total
The price of Brent, United Kingdom	112,0	108,8	98,9	54,0	62,1	50,0	43,4	52,4
The price of Urals, Russia	110,3	107,7	97,7	52,8	61,4	49,1	41,5	51,1

Source: Bobylev, J. Crude Oil Market: a new reality // Real-time monitoring. - 2016. - №1 (19). - P.14.

At the same time, in January, August and September 2015 the average price of Russian oil was 45-47 USD / Bbl., and in December - 36.2 USD / Bbl. In January of 2016 the decline in oil prices has continued, and in the middle of the month, they fell below 30 USD / Bbl.

Thus, low prices have become the new reality of the oil market.

As evidenced by recent data, in 2015 under the influence of low prices, curtailing production at higher cost fields began, investment activity decreased sharply. The US peak in oil production totaled 9.585 ml Bbl. per day and it was achieved in April 2015 before the decline began 9.18 million Bbl. per day in December, and a 4.2% decrease compared to the April highs. The production decreased in other high-cost areas - Norway, Great Britain and Mexico. Under the conditions of low prices, investments in the development of the most high-cost unconventional deposits such as shale oil in the United States, the oil sands in Canada and deep-water fields in different regions of the world, decreased significantly. For example, in the US the number of active drilling rigs, which are indicators of the

⁷ Bobylev, J. Crude Oil Market: a new reality // Real-time monitoring. - 2016. - №1 (19). - P.14.

investment activity, peaked - 1596 - in October 2014. After that, a steady decline in activity began to 537 units in December 2015, ie, it decreased over this period by 66%.

The result will be a further decline in US oil production⁸.

Reducing low-cost production would reduce the excess supply of oil and create preconditions for the rise in world prices. A major problem, however, is the policy of OPEC countries seeking to expand their market share. For countries whose incomes are critically dependent on oil exports, low prices increase the incentive to expand market share. By increasing the volume of deliveries, they tend to at least partially compensate the reduction in income due to the fall in prices. As a result, the reduction in oil production in high-cost regions is now effectively neutralized by the increase in production in the OPEC countries. In the IV quarter of 2015 compared to the same period of the previous year, the total oil production in Saudi Arabia and Iraq, which are the leading OPEC countries on production volumes, increased by 1.28 million bbl. per day, including in Saudi Arabia - at 0, 44m. bbl. a day in Iraq - by 0.84 million barrels.. per day (Table No.4).

Table No. 4: Oil production in the US and OPEC countries in 2014-2015 million bbl per day

Country	2014				2015			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
USA	8,14	8,61	8,84	9,25	9,49	9,50	9,43	9,30
Total OPEC	30,01	29,70	30,28	30,34	30,32	30,96	31,34	31,19
Saudi Arabia	9,80	9,65	9,70	9,63	9,73	10,07	10,22	10,07
Iraq	3,26	3,29	3,28	3,53	3,57	4,03	4,33	4,37

Source: Bobylev, J. Crude Oil Market: a new reality // Real-time monitoring. - 2016. - №1 (19). - P.15.

As a result, there is a systematic excess of the total quota of oil production, previously established (30 mln. bbl per day) by the OPEC countries. In addition, a significant increase in oil supplies from Iran is expected, which is third among OPEC member countries in terms of production as a result of the lifting of sanctions in the near future. Russia has also increased the supply of oil to the world market. Despite the systematic exploration of new fields, leaders in oil and gas production are the "old" regions, which have been utilized in the Soviet Union: West Siberia (about 60% of the total

⁸ Bobylev, J. Crude Oil Market: a new reality // Real-time monitoring. - 2016. - №1 (19). - P.15.

production); Volga-Urals (23-24%); Eastern Siberia (7-8%); Sakhalin (3.4%); Komi Republic (2.5%); North Caucasus (1.5%). Huge oil and gas reserves have been explored on the shelves of the seas of the Arctic Ocean. This region can take a leading position in the mining industry of the Russian Federation in the foreseeable future.

3.1.2 Major players in the global crude oil market

The major actors of the global energy market are Saudi Arabia, Russia, the USA, China and Iran. Saudi Arabia has a quarter of the world's proven oil reserves explored in approximately 80 fields, with about half of the reserves entered in the depths of all eight sites. Among them - the world's largest overland Ghawar oil field, with reserves of 70 billion barrels and Shaphan the field (19 billion barrels), which is the world's largest offshore entity. The oil fields of Saudi Arabia are like other countries in the Persian Gulf. They are light, sweet crude, and its deposits are located at shallow depth (1300-3000 m). Saudi Arabia is a major producer and exporter of liquid fuel. As a key state in the Organization of Petroleum Exporting Countries (OPEC), the country plays a special role in the world oil industry. Its production capacity is much greater than the volume of the current oil production; it is more than 800 thousand barrels / day. Availability of spare capacity, which is the only reserve in the world, allows Saudi Arabia to play on the world oil market as a buffer. If necessary, the country is able to dramatically increase production. In recent years the country has limited the volume of production to prevent oil prices falling. However, in 2014 its policy changed - it became more important to hold markets due to the growth in US fuel production. Saudi Arabia announced that it will not limit its production, despite the decline in oil prices⁹. Russia holds about 12% of the world market of oil. The evolution of the oil complex in Russia can be divided into the following main stages:

Stage 1 - The birth and formation of the oil industry. The beginning of development of the Russian oil industry is considered to be 1846. When under the leadership of the Main Department of the Caucasus Board member VN Semenova world's first exploratory oil well was drilled to a depth of 21 meters. This happened in the oil and gas condensate

⁹ Russia's place in the global commodities market [electronic resource] - Access mode: http://ecodelo.org/v_mire/35527-mesto_rossii_na_mirovom_syrevom_rynke-statia (reference date 26.02.2016)

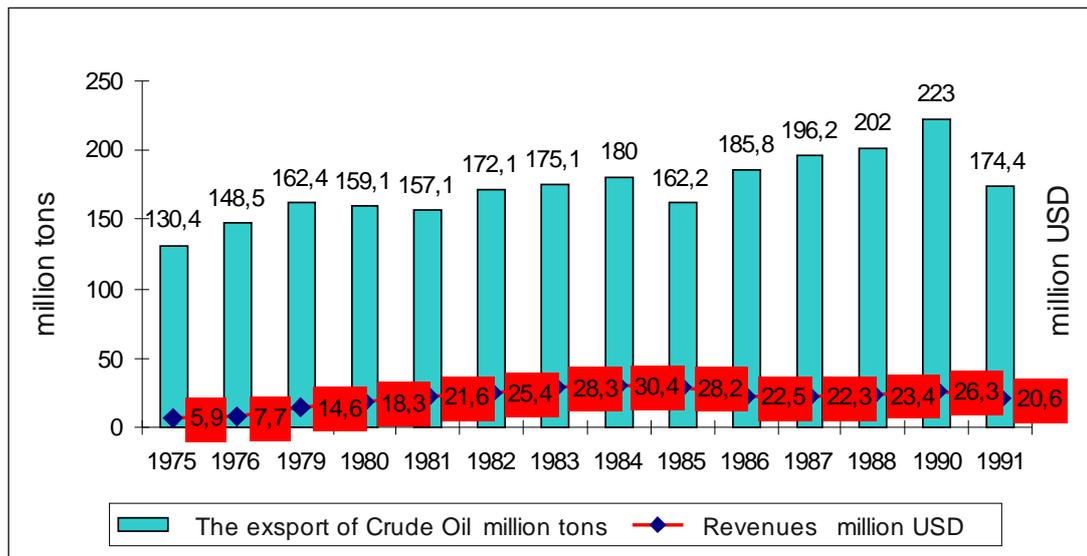
field in the village of Bibi-Heybat near Baku, 13 years before the drilling of the well-known American oil by Edwin Drake in Pennsylvania. The first oil was extracted by industrial method from the well Bibiheybat using wooden rods July 14, 1848 After this, the volume of oil production in Russia began to grow several times: in 1860 the volume of oil production amounted to 4 tons in 1890, -. 3.8 million tons, and in 1900 -. 10.4 million tons of oil production declined to 8.8 million tons before the February revolution.

Stage 2 - The extensive development of the oil and petroleum industry. Recovery of the oil industry was a priority of the USSR after the First World War Oil production totaled 22.3 million tons in 1932, thus exceeding more than twice the maximum amount of oil production of pre-revolutionary Russia. Its share became 19.5% of global oil production, which allowed the USSR to enter the 2nd place in the world. However, the volume of crude oil increase was mainly due to technical modernization of existing fields: Baku, Maikop and Grozny. The new large deposits were discovered and developed in the postwar period: Muhanovskoe (1945), Romashkinskoye (1948), Shkapovskoe (1953 g). Discovery and development of the richest oil and gas fields in Western Siberia became a landmark event in the oil industry of the USSR, such as Arlanskoe (1955), Samatlorskoe (1965), Mamantovskoe (1965), Urengoy (1966), Fyodorovskoye (1971) Ob (1982), Yurubcheno-Tokhomskoye (1982)¹⁰. Petroleum is formed and is actively developing at the same time. The first domestic oil refineries (the refinery) were built in the 1930s as part of an ambitious program of industrialization of the USSR. The majority of large plants were commissioned in the period from 1945 to 1965: more than half of the existing refineries in Russia (16 plants). It should be noted that the functioning of the oil refining industry is largely influenced by features of the political system and the administrative-command economic model of the Soviet Union, primarily on geographic location. In the context of the Cold War, the constant threat of hostilities existed, so strategically important oil refinery were built in the depths of the country, away from the border, close to the main regions of oil production. Also, the national economy determined the need for fuel oil refineries technological scheme of work. Since the beginning of the 1970s, oil revenues have become a major source of foreign exchange earnings of the USSR and by the end of 1980 their share was 44 percent, or 223 billion US dollars. (Graph No.1).

¹⁰ Smirnov D.B. The institutional structure of the oil complex - Trends and Challenges // Business Strategy. - 2015. - № 9 (17). - P. 37.

However, the development of the oil complex was extremely unbalanced due to directive of financial resource allocation policy which operated under the central planning system. Oil complex experienced a chronic shortage of investment in the modernization of the oil-producing enterprises and refineries equipment and technologies.

Graph No. 1: Dynamics of export of oil and currency revenues in 1975-1990



Source: Brekhuntsov A.M., A.N. Zolotov, Rezunenکو V.I., F.K. Salmanov, Saltykov, V.I., V.I. Spielmann Western Siberia will remain the main oil and gas province in Russia in the XXI century. // Geology of oil and gas. - 2000. - № 4. - P.12.

Oil complex in the Soviet Union as a national economic element consisted of companies and organizations the following Ministries: of oil industry, oil industry and the petrochemical industry also the oil and gas department of the Ministry of Geology and the State Committee of oil¹¹.

Stage 3 - The oil complex transition from a command economy to a market economy model.

The collapse of the Soviet Union into separate independent states and Russia's transition to a market economy radically changed the principles of the functioning of the oil sector and its institutional structure. In 1991, the Ministry of Oil and Gas Industry was abolished and, as a consequence, the centralized management of the oil complex was abolished as well.

¹¹ Smirnov D.B. The institutional structure of the oil complex - Trends and Challenges // Business Strategy. - 2015. - № 9 (17). - P. 37.

In 1992, the structure of the domestic oil complex represented about 2000 separated companies. Against the backdrop of economic crisis and falling oil prices the main problems of the industry were designated:

- Inefficient use of mineral resources (the low level of the indicator "recovery factor" - 25% compared to the world average of 35%);
- A high degree of wear of fixed assets (50% to 70%);
- The use of outdated production technologies in oil production;
- Low depth of oil processing, the poor quality of oil at the existing refineries (in 1960, up from 67% at the end of 1980 - 63 %.);
- Poor quality recycling and the unqualified use of associated petroleum gas.

To overcome the crisis in the sector and further development of the oil complex of the Russian Federation, Ministry of Fuel and Energy adopted the "Concept of structural reforms and privatization of enterprises of fuel and energy complex" in June 1992, developed on the following principles:

1. Saving unified production and technological complexes of oil and oil refining and sale of oil products.
2. Preservation of the integrated system of pipelines to ensure a free, non-discriminatory access to all oil producers and oil.
3. Acquisition of new sources of funding for the modernization of existing and construction of new production capacities through privatization.

Reforming the oil complex in the framework of the "Concept of structural reforms and privatization of enterprises of fuel and energy complex" began in the second half of 1992 with the adoption of the next President of the Russian Federation decrees:

- Decree number 542 of July 1, 1992 "On the status of production and scientific-production associations of the fuel and energy complex."
- Decree number 922 of 14 August 1992, "On peculiarities of the transformation of state enterprises, associations and organizations of the fuel and energy complex in the joint-stock companies".
- Decree number 1333 dated November 5, 1992 "On the transformation of the State" Gazprom "gas concern in the Russian Joint Stock Company" Gazprom ".
- Decree number 1403 of November 17, 1992 "On peculiarities of privatization and conversion into joint state-owned enterprises, production and scientific-production

associations of petroleum, petroleum products and refining industry. "Another major player in the world market of crude oil is the United States. It accounts about 12% of world oil production. In recent years, there is a tendency reducing the US role as an importer of oil and its gradual transformation into an exporter of oil and oil products. It is suggested about the transformation of the bipolar world oil market in monopole market on which a key role instead of the current two centers "oil power" (the United States and Saudi Arabia and OPEC) will play the United States only¹². Chinese National Republic of China (PRC), with a population of over 1.3 billion people, ranking third in the world (after the US and EU) in terms of GDP (12.61 trillion US dollars), is one of the fastest growing countries in the world. Since mid-1960s China has become a net exporter of energy and exported oil and large amounts of coal to Japan and Asia Pacific countries. The pace of economic growth has led to increased demand for raw materials, and in 1993, when domestic oil consumption has exceeded its proposal; China has begun to import oil from other countries. Since 2005, China has come in second place after the United States on the consumption and production of energy. Extraction of oil is gradually increasing, but the demand for it is growing much faster. According to estimates of the US Energy Information Administration, oil consumption in China in 2008 was 7.8 million barrels / day, and came into second place in world after the US. China produces 4.0 million barrels / day in its territory, and the volume of imports in 2009 was 3.6 million barrels / day - this is the third place after the United States (12.2) and Japan (4.9). China has moved up to second place in 2013, increasing oil imports to 6.2 million barrels / day, while the US it reduced to 6.6 million barrels / day¹³. According to forecasts of the US Energy Information Administration (EIA), China's consumption of oil will rise to 9.8 million barrels / day by 2030, while its import will rise to 66% by 2020 and to 72% of consumption by 2040¹⁴. By 2045, China will meet 45% of its needs in energy raw materials using the import and overtake the United States as the largest importer of oil. More than half of China's crude oil imports come from the Middle East, which is 2.9 million barrels / day or 52% of

¹² Konoplyannikov A. 2013. Oil unipolar world - a real prospect. - Economic policy. 05.09.
Access mode: <http://ecpol.ru/component/content/article.html?id=1016> (reference date 26.02.2016)

¹³ Wei Y.M. China Energy Report (2012): Energy Security Research / Y. M. Wei, G. Wu et al. Beijing: Science Press, 2012. 280 p.

¹⁴ China. Country Analysis Overview [04.02.2014] // US Energy Information Administration [website].
URL: <http://www.eia.gov/countries/cab.cfm?fi ps=ch> (reference date 26.02.2016)

imports of crude oil in 2013. According to the forecasts of the International Energy Agency, demand and production in 2015 will be 11.1 and 4 million barrels / day, respectively, while in 2030 - 3.4 and 16.5¹⁵. The history of the oil industry in Iran has more than 100 years. Its proven oil reserves reach 155 billion barrels (18% of the world), gas - 33 trillion m³ (9.4%). Because of this, Iran is ranked third in the world by volume of hydrocarbon reserves. Their total cost, according to official estimates, could amount to up to 37 trillion. More than 50% of the oil is concentrated on five giant fields, which are located in the southwestern part of the country, near the border with Iraq. On the South Pars field, which is a huge gas field, it is accounted for about 30% of proved reserves of "blue fuel" and 35% of its total production. Not long ago, the Iranian authorities have reported about detection of new large hydrocarbon deposits on the border with Turkmenistan and Iraq; 118 wells for oil and gas have been drilled in the country in 2014¹⁶. Global consumption of liquid hydrocarbons reached 4.5 billion tons in 2014. The stable tendency of excess of demand over supply of oil that has been observed since the mid-2000s, the situation was reversed due to oversupply in 2012. The cumulative effect of the long-term oversupply presence in the steel market became one of the fundamental factors of sudden and profound drop in oil prices since the second half of 2014. According to estimates of the Energy Information Administration (EIA), in 2015 and 2016 the demand for liquid hydrocarbons will increase by 1.5% and by 2017, the demand for liquid hydrocarbons, followed by an acceleration of the global economy will increase by 1.6%. The forecast for global oil demand in 2016, in millions of barrels is presented in Appendix. The presented data show that the global market has seen a slight increase in demand in 2016 against 2014, but a decrease compared to 2015. For example, in Africa, the demand for oil will grow from 4.1 million barrels in 2015 to 4.2 million barrels in 2016, in the US - from 31.1 million barrels to 31.2 million barrels in the Asia and Pacific region - with 31.8 million barrels to 32.4 million barrels, in the countries of Europe and the former - will remain at 14.4 million barrel and 4.9 million barrels respectively. World oil demand will rise from 94.4 million barrels in 2015 to 95.6 million barrels.

Global oil consumption in major regions and countries are presented in Table No. 5.

¹⁵ World Energy Outlook, 2014 / International Energy Agency [website].

URL: http://www.iea.org/bookshop/477-World_Energy_Outlook_2014 (reference date 26.02.2016)

¹⁶ M. Kutuzov sword of Damocles Iran // Oil of Russia. - 2015. - №9. - P.38.

Table No. 5: World Oil Consumption by Country (million tons per year)

Country	2012	2013	2014	2015	2016	2017
World Consumption	4420	4475	4522	4587	4657	4731
United States	920,6	943,9	948,9	961,8	971,9	977,8
Europa (OECD)	685,9	678,0	669,7	664,2	671,4	678,2
OECD – total	2285	2294	2280	2287	2300	2318
Japan	233,8	225,7	215,5	211,2	204,1	207
China	511,6	528,1	546,7	562,5	588,1	613,2
India	180,3	183,5	188,4	195,4	200,3	206,5
Brazil	139,7	146,3	153,6	156,6	158,1	158,9
Russia	141,1	134,3	138,8	144,5	147,0	147,8
The Country is not an OECD	2134,8	2181	2242	2301	2357	2413

Source text: Energy Information Administration (EIA) [Electronic resource]. – Access code: <http://www.eia.gov> (Date of access Feb 25. 2016); Cambridge Energy Research Associates (IHS CERA).

Globally, oil consumption grew by 0.7% in 2014. In developed countries, it declined by 1%. In the developing world, a further increase in consumption (+ 2.5%) was observed, largely supported by increased demand from the Asian market. Russia in recent years, continues to slowly but steadily increase its share of global oil consumption. From 2014 the share of consumption of liquid hydrocarbons by developing countries exceeded consumption in developed countries, thus, the structure of global consumption of liquid energy will save the tendency of reducing the share of developed countries and the growing share of developing. An estimated US Energy Information Administration (USEIA), the demand for liquid hydrocarbons in 2014 slowed down to 1%, compared with growth of 1.7% in 2013. In developed countries, the demand declined by 0.7%, Japan has reduced consumption by 4.5%, Europe - by 1.2%; in US fuel demand increased by 0.4 per cent. In developing countries, fuel consumption increased by 2.7%, China's demand grew by 3.6%. In Latin America and OPEC supply growth has slowed, but remained at a high level and amounted to 2.9%. Over the forecast period, reflecting the acceleration of the world economy, the growth in demand for liquid hydrocarbons will gradually grow, and in 2018 the consumption will grow by 4.7% compared to 2014, but the growth in demand will be almost two times lower than in the previous five-year period.

The rate of growth of oil consumption in major regions and countries are presented in Table No.6.

Table No.6: The rate of growth of oil consumption in the major regions and countries (% to previous year)

Index	2013	2014	2015	2016	2017	2018	2018 to 2014
World Consumption	1,7	1,0	1,1	1,1	1,2	1,3	4,7
OECD	0,4	-0,7	0,4	-0,1	0,1	0,2	0,5
USA	2,6	0,5	1,7	0,5	0,6	0,6	3,5
Canada	3,4	-1,4	-0,6	0,0	0,2	0,4	0,0
Europa	-1,2	-1,2	-0,8	-0,8	-0,5	-0,2	-2,3
Japan	-3,4	-4,5	-3,1	-1,4	-1,2	-1,0	-6,6
other OECD countries	-1,1	0,1	1,7	0,3	0,3	0,3	2,6
Countries are not OECD	3,0	2,7	1,7	2,3	2,3	2,3	8,9
China	3,2	3,6	3,1	3,1	3,1	3,0	12,9
Countries are not OECD	2,4	1,9	1,8	2,7	2,5	2,3	9,7
countries of the former USSR	3,2	1,5	-3,8	-1,8	-1,0	0,5	-6,0
Russia	-5,6	3,6	-5,1	1,4	3,1	0,3	0,2
other European countries	0,5	6,6	1,2	1,3	1,2	1,0	4,8
OPEC and other countries not in the OECD	3,3	2,9	2,4	2,7	2,5	2,3	10,2

Source: Energy Information Administration (EIA); Forecast Russian Ministry of Economic Development (MED); Cambridge Energy Research Associates (IHSCERA).

At the same time, the demand will grow quite rapidly in the United States in 2016 under the influence of low prices, large stocks, and structural changes in the industry - by 1.6%; but in the coming years it will stabilize at the level of 0.4-0.5%, and for the period 2016 -2018 it will grow by 3% and its dynamics will be significantly lower growth in consumption of liquid hydrocarbons in the world. Demand in Europe will continue to shrink, thus, reducing the consumption of liquid hydrocarbons will slow. By 2018, following the recovery of the economy, reduction of demand will slow down to 0.2%, but overall, for the period 2016 - 2018 reduction of demand in Europe will be 2.3%. Leaders in terms of liquid fuels consumption growth will remain developing countries, especially China and India, where demand volumes for 2016-2018 will increase by 12.9 and 10.1%, respectively. Consumption in Russia will grow by 3.8% in Brazil - by 9%. Consumption growth in the countries that are not members of the OECD will be high in the forecast

period - 10.2%, despite a possible slowdown in economic growth¹⁷. European Union countries are one of the largest exporters of energy resources on the world market, providing 13.2% of various types of energy consumption. At the same time, the dynamics and perspective of the country of the European Union intend to reduce energy dependence and to carry out the production of renewable energy. Thus, according to European Commission estimates, the share of renewables in the EU energy mix by 2030 will reach nearly 15%, while the share of crude oil, by contrast, will be reduced from the current 36% to 32%. Natural gas consumption in the EU is also somewhat reduced, although to a lesser extent than oil. Thus, under the influence of low hydrocarbon prices, curtailing of oil production has started, at relatively high cost deposits; investments in the development of unconventional reserves decreased sharply, including shale oil in the United States. However, it is neutralized by the increase in production in the leading OPEC countries. Russia also increased its supply of oil: in 2015 its production reached the highest level since 1990 and oil exports - a historic high. One should expect a significant increase in supply from Iran. The overall situation in the market is characterized by a predominance of the factors that will contribute to the preservation of low world oil prices.

3.1.3 Chapter Summary

Current situation on the oil market is characterized by a number of factors that will contribute to the preservation of relatively low oil prices. Among the most significant are the following: the existence of significant reserves of shale oil in the US, which will quickly get involved in the development and increase the supply, with an increase in world oil prices above \$ 60 / bbl.; the economic slowdown in China; drop in OPEC discipline; increased tension in the relationship between Saudi Arabia and Iran, as well as an increase in oil supply by Iran as a result of lifting of the sanctions, related to the implementation of its nuclear program. In these circumstances, the most likely prospect of the oil market appears to be maintaining low international prices in the coming years. The main players on the world market of oil production are the US, Russia and China. If Russia and the US - are the main oil-producing countries, China - the largest oil importer. United States of

¹⁷ The scenario conditions, basic parameters of the socio-economic development of the Russian Federation and threshold levels of prices (tariffs) for services companies in the infrastructure sector by 2016 and the planning period of 2017 and 2018 [Electronic resource]. Access mode: <http://economy.gov.ru/minec/activity/sections/macro/prognoz/> (accessed 25.02.2016)

America in its energy policy (the transition from a net energy imports to their aggressive export) based on accelerated expansion of shale oil production. The last decade has witnessed the emergence of a new dimension of energy security. On the world energy market, the competition is growing for a share in hydrocarbon production and in supplies to major regional markets. First of all, it is a competition between the US, Russia and Saudi Arabia. They account for 33% of world oil production, 41% of gas production. In addition, the United States in the next 5-7 years will gradually reduce import of oil from the Middle East, while expanding its presence as an exporter of hydrocarbons.

4 Practical Part

4.1 Analysis of the development of Russia's oil industry

4.1.1 Analysis of the rate of development of the oil industry

As a result of the restructuring of the oil sector through privatization, there were formed three groups the industry:

1) Companies engaged in the extraction, transportation, processing, production and marketing of petroleum and petroleum products;

2) A vertically integrated oil companies (VICs below) - companies, combining enterprises throughout the process chain, comprising mining, manufacturing and marketing, on the principle "from the wellhead to the gas station".

This group consisted of OAO NK "LUKOIL", OJSC "Surgutneftegas", of "Yukos", JSC "Sibneft", OJSC "Tyumen Oil Company", JSC "SIDANCO", OJSC "Tatneft", OJSC "Bashneft";

3) Infrastructure transport companies to transport crude oil - JSC "Transneft" for the transportation of petroleum products - JSC "Transnefteprodukt".

On the legal side of the institutional analysis of the oil complex in accordance with applicable from 1 February 2015. National Classification of Economic Activities OK 029-2014 (the NACE-2) includes the enterprises of the oil and refining industry. The oil industry is a heavy industry, including the exploration of oil and gas exploration, drilling, extraction of oil and oil (passing) gas production, gas processing, crude oil pipeline. The oil industry refers to mining group of industries (NACE Code 06. Section B. Mining and quarrying. Class "Crude oil and natural gas"). Oil complex brings together various enterprises (oil production, refineries and refineries, geologic organizations, organizations petroleum exploration geophysics, transportation of oil and oil products, oil construction, oil engineering enterprises, universities, research and design institutes)¹⁸, which, according to the practice of the Anglo-American oil companies can be divided into three segments of the oil business:

¹⁸ Dunayev V.F. Shpakov V.A. Yepifanova N.P., Lyndin V.N.
The economy of the oil and gas industry - M.: Oil and Gas, 2006. - P.15.

1) Upstream - a segment of the oil business, which includes exploration and organization of oil producing enterprises;

2) Midstream - companies belong to the segment engaged in the transportation of oil and oil products, including infrastructure - JSC "Transneft", JSC "Transnefteprodukt";

3) Downstream - this segment includes refineries and a network of sales of petroleum products, including the network of automobile service stations (the petrol station).

According to "British Petroleum" estimates, a British oil and gas company, which were published in the Statistical Review of World Energy 2014, as of 01.01.2014. The Russian Federation occupies 8th place in terms of proven oil reserves (93.03 billion barrels, or 12.74 billion tons) and 1st place in oil production (3 937.6 million barrels a year, or 531 430 000 tons year)¹⁹.

Oil and gas condensate (oil feedstock) is carried out by 294 companies in Russia, which have a license for subsoil use.

Including:

– 111 enterprises, which are owned by the 10 vertically integrated oil companies (hereinafter - the VICs), whose share at the end of 2013 accounts for a total of 87.4% of the national oil production;

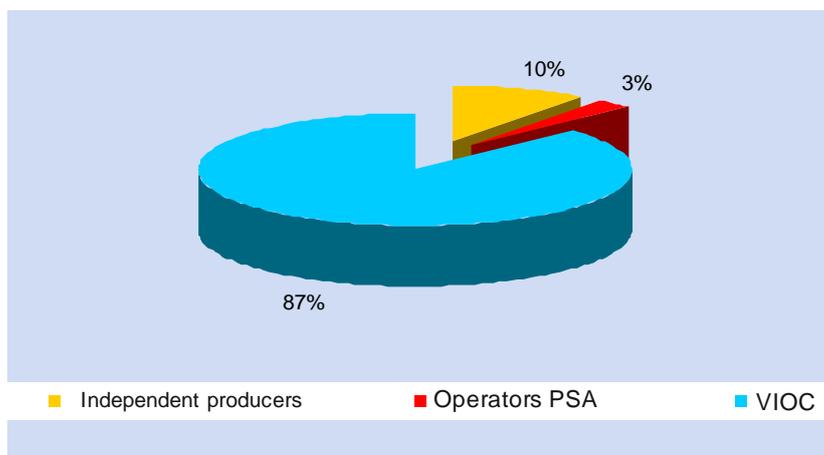
– 180 independent oil companies that do not belong to "VICs";

– 3 organizations operating in accordance with the production sharing agreement (Total - project "Kharyaga», ExxonMobil - the project "Sakhalin-1», Sakhalin Energy - the project "Sakhalin-2").

The structure of the oil, represented by groups of companies in 2013 is shown in Graph 2.

¹⁹ Statistical Review of World Energy 2014 [Electronic resource]. – Access mode <http://bp.com/statisticalreview> (26.02.2016)

Graph No. 2: Structure of oil production by groups of companies in 2013



Source: Smirnov DB The institutional structure of the oil complex - Trends and Challenges // Business Strategy. - 2015. - № 9 (17). - P. 42.

In the segment of «Midstream» in 2000-2009 oil transport infrastructure developed rapidly. During 2000-2006 an alternative was formed to transit through the Baltic countries, the system of direct deliveries to the North-West European markets - Baltic Pipeline System; modernized sections of oil pipelines of JSC "Transneft", renovated ports on Novorossiysk, Nakhodka, and Tuapse. In December 2009 the first stage of the pipeline was launched called «Eastern Siberia - Pacific Ocean" (ESPO) oil pipeline capacity of 30 million tons per year. The second stage of "ESPO-2" was commissioned in December 2012. In 2015 the power of the ESPO-1 was increased to 58 million tons per year. Since the early 2000s, crude oil production has grown steadily by an average of 11.42% a year in Russia, except for 2008 when there was a slight drop caused by the global financial crisis. For two consecutive years, in 2009-2010, the Russian Federation ranked first in the world in terms of crude oil production. Since 2011, Russia has again moved into second place, losing the championship of Saudi Arabia. Currently, Russian oil production is carried out in a reduction in hydrocarbon prices and international sanctions. At the same time oil and gas sector remains to be a major donor to the country's budget. The fall of the ruble against the world currencies is favored by Russian producers, as well as the government pursued a flexible system of tax formation²⁰.

²⁰ Oil production in Russia: statistics [electronic resource]. - Access mode: http://www.syl.ru/article/209339/new_dobyicha-nefti-v-rossii-statisticheskie-dannyye (reference date 02/25/2016)

The resulting geopolitical tensions between Russia and the West, the imposition of economic sanctions on the Russian Federation may significantly affect its economic well-being in the next 3-5 years. However, it should be treated as reserved to the statements of politicians, decision to impose sanctions, and to analysts and experts, as well as media comment on possible damage from them to Russia. Thus, the newspaper "Vedomosti", referring to the Bank of America Merrill Lynch, wrote that the sanctions against Russian oil companies dearly cost the state budget due to falling raw material production: the industry cannot cope without western technology. The oil industry may receive less, about 1 trillion dollars of investment over the next 30 years, predicted the bank's analysts. A lost income for the period up to 2020 could reach 27-65 billion US dollars²¹. Technological sanctions are a ban on the supply of equipment and technologies, as well as for the provision of services for the deep-water, oil shale and Arctic projects. Financial sanctions include a ban on the provision of new long-term equity and debt capital to domestic banks and oil and gas companies to conduct transactions with their new shares and debt instruments, as well as lending. Sectoral sanctions are key constraints for oil and gas industry, but sanctions against Russia are not exhausted. More broadly, they combine sanction lists, restrictions for the Crimea and Sevastopol, the suspension of cooperation with Russia in certain areas. The most large-scale unilateral sanctions against Russia as a whole and, in particular, its NGK introduced the US and the EU, followed by other European countries as well as Canada, Australia, New Zealand, Japan²². Oil production in Russia in 2014 amounted to 526.71 million tons. This is slightly higher (0.6%) than indices of 2013. Moreover, achievement of 2014 was a record in modern Russian history. Most of all hydrocarbons produced PJSC Company "Rosneft" - nearly 191 million tons. In second place - PJSC "LUKOIL" (86.6 million tons), PJSC "Surgutneftegas" provided production at 61.4 million tons.

The impact of the sanctions on the oil sector can be seen in different planes - in terms of budgetary effects of the reorientation of export flows, adjustments of public policy, energy geopolitics, and so on. In this case, it is estimated from the position of the

²¹ Kravchenko E. Sanctions the US and EU can lead to the decline of Russia's petroleum industry [Electronic resource]. – Access mode: <http://www.vedomosti.ru/business/articles/2014/08/14/neftyanoj-udar-po-byudzhetu> (accessed Feb. 25.2016)

²² Pominova I. Test of strength//Oil of Russia. – 2015. No.11-12. [Electronic resource]. – Access mode: <http://www.neftrossii.ru/content/test-na-prochnost> (date of access Feb 25 2016)

oil complex companies, namely certain aspects of their sustainability - industrial, technological, financial, strength of alliances with foreign partners. Technological sanctions are extended to the following Russian companies: "Rosneft", "Gazprom", "Gazprom Neft", "LUKOIL", "Surgutneftegaz" (explicitly listed are the US). Moreover, the sanctions are aimed mainly at oil projects (which probably reflect the contribution of oil to the state budget). Also, financial sanctions affect companies such as "Rosneft", "Transneft" and "Gazpromneft". EU restricts the possibilities of funding to 30 days, the United States - 90 days, adding "Novatek" to this list. New conditions for Russian oil and gas industry also generate a global factor in the decline in oil prices. During the six months (from mid-June 2014 to mid-January 2015), the world's stock fell by 2.6 times. In some cases, the separation of these factors is difficult. Fitch Ratings believes that sanctions are more serious challenge for the Russian oil and gas companies than the decline in oil prices. Firstly, the cost of production by the largest Russian subsoil is traditionally one of the lowest in the world. Secondly, the existing tax system in the Russian Federation contains progressive elements permitting consideration of changes in world prices. And finally, thirdly, the softening effect to NGK, export-oriented, had a devaluation of the national currency, which in the mentioned period, the dollar has depreciated by almost 2 times. As a result, Russian companies' costs have changed little, and the decline in revenues in ruble terms was less marked than in dollars: the price of Urals oil in rubles fell by 1.4 times²³. Despite the fall in oil prices and imposed financial and technological sanctions against the country, a positive trend in oil production was maintained (Table No.7).

Table No. 7: The rate of growth of production and export of crude oil in Russia in 2011-2015, in % to the corresponding period of the previous year

Index	2011	2012	2013	2014	January- November 2015
Oil production, including gas condensate	101,3	101,3	100,9	100,7	101,3
Oil export	97,5	98,2	98,6	94,4	107,6

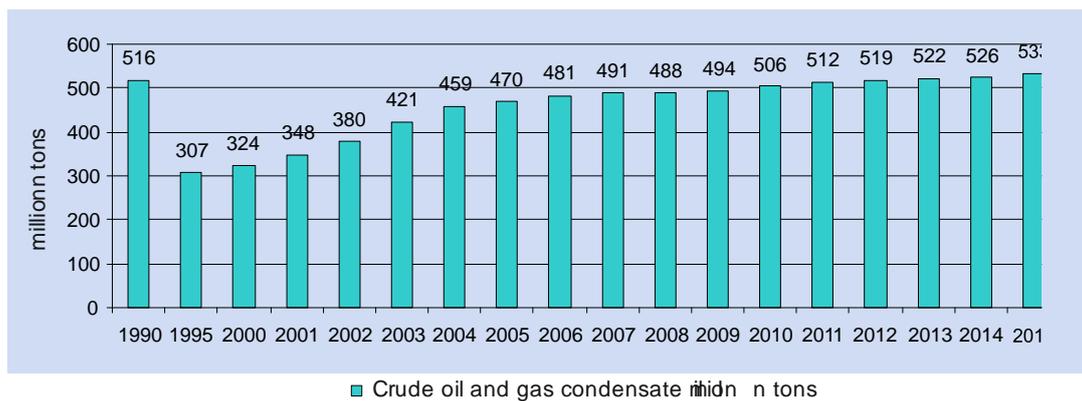
Source: The official site of Federal state statistics service [Electronic resource] Access mode: http://www.gks.ru/free_doc/new_site/business/prom/natura/mes10.htm (date of access Feb/ 26 2016). The export of Russian Federation crude oil for 2000-2015 (According to the Federal customs service of Russia and Rosstat) [Electronic resource]. – Available at: http://www.cbr.ru/statistics/credit_statistics/print.aspx?file=crude_oil.htm (date of access Jan 12.2016)

²³ Pominova I. Test of strength//Oil of Russia. – 2015. No.11-12. [Electronic resource]. – Access mode: <http://www.nefrossii.ru/content/test-na-prochnost> (date of access Feb 25 2016)

The volume of oil exports in the first 11 months of 2015 also increased against the 2011-2014 and reached 107.6%.

In real terms, in 2015 oil production in Russia reached 533 million tons, the highest level since 1990 (Graph No. 3).

Graph No. 3: Dynamics of production of crude oil in Russia in 1990-2015.



Source: The official site of Federal state statistics service [Electronic resource]. – Access mode: http://www.gks.ru/free_doc/new_site/business/prom/natura/mes10.htm (date of access Jan 12.2016);

The investments have implemented a positive impact on the production in recent years, the devaluation of the ruble, as well as reducing the tax burden, accompanied by a decrease in world oil prices. Total exports of oil and oil products in 2015, according to preliminary estimates, exceeded 400 million tons, which is a historical high²⁴. Oil production in Russia and its export was stable for three quarters in 2015. In 2013 there was sustained growth, and in 2014 there were sharp fluctuations (with the failure in July), 2015 was relatively stable. The forecasts for 2016 are less optimistic: gradual decline in the supply of hydrocarbons is expected abroad, from 11.1 million barrels per day (m bbl / d) to 10.8 m bbl / d. In August 2015, the first increase in production recorded at 150 kb / d (thousand barrels per day). Due to increase of speed of drilling, crude oil extraction, as well as gas condensate in July, increased by 20 kbbl / d, accounting for 10.68 m bbl / d.²⁵ Russian Opportunities in maintaining the achieved oil production will largely depend on the level of world prices. In particular, this will depend on the possibility of involvement in

²⁴ Bobylev, Y. the development of the oil sector in Russia // The economy – 2015. –No.6 –p. 45–62

²⁵Oil production in Russia: statistical data [Electronic resource]. – Available at: http://www.syl.ru/article/209339/new_dobyicha-nefti-v-rossii-statisticheskie-dannyie (date of access Feb 25 2016)

the development of new fields. Let us consider the impact of sanctions on the various aspects of sustainability of the oil companies. In 2014 the production of oil and gas condensate in Russia reached 526.7 million tons, 3.3 million tons more than the previous year. The rate of growth of oil production is slowing, but it was apparent in 2012. Moreover, 87% of the raw materials were provided by nine of the largest vertically integrated oil companies, five of which have come under sanctions (74% of Russian oil production).

Oil Russia's largest oil and gas companies in 2013-2014 are presented in Table No. 8.

Table No. 8: Oil major oil and gas companies of Russia in 2013-2014, million tons%.

Company	Property	2013	2014	Transformation, +/-	Growth, %
JSC Rosneft	State	192,6	190,9	-1,7	99,12
JSC LUKOIL	Private	86,7	86,6	-0,1	99,88
JSC Surgutneftegas	Private	61,4	61,4	0	100,00
JSC Gazprom Neft	State	32,2	33,6	1,4	104,35
JSC Tatneft	Private	26,4	26,5	0,1	100,38
JSC Bashneft	State	16,4	17,9	1,5	109,15
JSC Slavneft	State	16,7	16,1	-0,6	96,41
JSC Gazprom	State	16,2	16,1	-0,1	99,38
JSC OC RussNeft	Private	8,9	8,6	-0,3	96,63
JSC Gazprom Neft	State	32,2	33,6	1,4	104,35
JSC Tatneft	Private	26,4	26,5	0,1	100,38
JSC Bashneft	State	16,4	17,9	1,5	109,15
JSC Slavneft	State	16,7	16,1	-0,6	96,41
JSC Gazprom	State	16,2	16,1	-0,1	99,38
JSC OC RussNeft	Private	8,9	8,6	-0,3	96,63

Source: Oil production in Russia: statistical data [Electronic resource]. – Available at: http://www.syl.ru/article/209339/new_dobyicha-nefti-v-rossii-statisticheskie-dannyye (date of access Feb 25 2016)

The largest increase (relative to 2013) the company «Bashneft» has made - 9.1% (from 16.4 to 17.9 million tons); "Gazprom Neft" - 4.5% (from 32.2 to 33.6 million tons); "Tatneft" - 0.3% (from 26.4 to 26.5 million tons).

In 2015, production volumes of the two largest oil companies - "Rosneft" and "Lukoil" decreased - compared to last year data. At the same time, companies "Bashneft", "Gazprom Neft", "Severenergia", "Gazprom" have demonstrated an enviable growth.

Capacity of oil production lasted three quarters of 2015, reaching a value of 145 kbbl / d (1.4%) by September. The average total annual increase is expected to be 95 kbbl / d, by a seasonally adjusted. On the contrary, in 2016 the volume of oil production in Russia is expected to be reduced. The reason: low prices of hydrocarbons; sanctions; the decline of world production; oil and gas policy of the EU, which implies the diversification of supply; internal reasons. As expected, the entered restrictions do not have a significant impact on the sustainability of the production NGK in the short term, taking into account the inertia of the oil and gas sector (investment cycle which stretched to 15-20 years) and targeted sanctions on certain types of projects, whose contribution to the production by the Russian current stage is low. Moreover, according to forecasts, voiced by the Ministry of Energy and Ministry of Economic Development in October 2015, oil production in the country will continue to grow in 2016 (at the risk of decline in 2017). Moreover, the marked reduction in the production of medium-term raw material risks is not dictated by the pressure of the sanctions and the decision to freeze export duties²⁶. Technological sanctions are aimed at the deep, oil shale and Russian Arctic projects. Currently the domestic oil production is concentrated on the traditional acting fields, the contribution of difficult to extract reserves is at the level of 6%, offshore projects (the shelf of the Baltic, Caspian, and the Pechora Sea of Okhotsk) - about 3%. According to the Ministry of Energy, the dependence of traditional deposits by foreign technologies and services is low (around 20%) for TRIZ it increases to 60-80% and for offshore projects exceeds 80%. At the same time, in order to maintain the level of the national oil production, the share of cargo and offshore, in the long term up to 2030, should expand by more than 2 times. That is, in the preservation of sanctions, technological limitations can become a serious obstacle for the planned growth (Table No. 9).

²⁶ Oil production in Russia: statistics [Electronic resource]. – Access mode: http://www.syl.ru/article/209339/new_dobyicha-nefti-v-rossii-statisticheskie-dannye (accessed 25.02.2016)

Table No. 9: Potential technological impact of sanctions on Russian projects

Type of project	The Impact of technological sanctions
Offshore projects in the Arctic (Gazprom, Rosneft)	Critical (high dependence on imported equipment and technologies – the failure to implement projects)
Black sea (Rosneft)	Critical Exploration work was carried out by Rosneft and ExxonMobil (technology)
Caspian sea (Rosneft, LUKOIL)	Uncritically Sanctions do not apply (shallow depth)
Baltic sea ("LUKOIL")	Is not Critical Sanctions do not apply (shallow depth)
Hard-to-recover oil in Western Siberia (Surgutneftegas, Rosneft, Gazpromneft, LUKOIL)	Critical High dependence on technologies and equipment (frac)

Source: Pominova I. Test of strength // Oil of Russia. - 2015. - №11-12. [Electronic resource]. - Access mode: <http://www.neftrossii.ru/content/test-na-prochnost> (reference date 02/25/2016)

Table 9 shows that the main pressure of technological sanctions will be focused on two state-owned companies - "Gazprom" and "Rosneft". This is partly due to the fact that they actually have the exclusive right to develop the Russian shelf, which they purchased in 2008. The presence of other domestic companies on the country's shelf is allowed only with the licenses, distributed before the legislative changes. Russian Arctic projects are most vulnerable to technological limitations. In addition, they, like TRIZ, are more sensitive to the fall in world oil prices. In response to requests from the companies, the Ministry of Nature Protection have agreed to transfer eight "arctic" licenses of "Rosneft" and five of "Gazprom" and it admits that, in general terms of input, for the extraction of oil and gas resources of the Arctic shelf (in the light of technological sanctions), the projects may go beyond the forecast horizon 15-20 years. It is estimated very positively by the environmental organizations, which believe that the achieved level of technological development of the Arctic projects is associated with very high environmental risk. Sanctions imposed by the US Department of Trade and Finance related largely with shale oil, deep-water oil extraction and production offshore. However, the legislation is rather complicated: it is possible that it will apply to conventional oil projects. American companies because of legal uncertainty will be afraid to invest in Russian projects. The sanctions have caused damage to a number of Russian oil companies. "Shell" and "Gazprom oil" had planned to drill 5 exploration wells, but because of the sanctions, the

plan of work in Russia changed. "Lukoil" had planned to create a mixed company together with the "Total". It was necessary to carry out exploration, but after the introduction of sanctions French company announced the freezing of the project. At the end of September 2014, "Exxon" has suspended cooperation with "Rosneft" for the development of shale oil in Western Siberia²⁷. Imposition of sanctions has imposed the development and adoption of import substitution plans in the oil and gas industry of the Russian Federation. "Action Plan to reduce dependence from import in Russian fuel and energy equipment sphere, hardware, accessories, services (works) of foreign companies and from the use of foreign software" was approved in November 2014²⁸, "Action Plan for import substitution in oil and gas engineering industry of the Russian Federation"²⁹ – in March 2015. Ministry of Energy expects that these actions will reduce the dependence from import in oil and gas engineering sphere from the current 60% to 43% by 2020. Urgent actions (2016) are focused on the development of technology of directional drilling and hydraulic fracturing; mid-rate actions propose the creation of technologies for the development of hard-to-recover resources (2018) and the implementation of offshore projects (2020).

Technological sustainability of Russian oil and gas projects against Western sanctions depends on the type of projects and the availability of affordable technologies (primarily the domestic ones, as there are risks of increasing of sanctions pressure). As the contribution of hard-to-recover resources and off-shore resources in the national production (medium and long term) will increase, the pressure of the technological sanctions will also increase. Thereby, maintaining the stability of the process in oil and gas sphere due to the effectiveness of implementation of the announced measures on import substitution. The main reason for the deteriorating of financial measures (net profit, return on total assets) of Russian oil and gas companies, that are facing financial sanctions, is the unfavorable external economic environment. This is a global trend for the oil and gas industry. Also we should be point out some examples of reducing financial stability in

²⁷ EU – Russia: peculiarities of economic relations in modern conditions. [Part I] = Russia – EU: peculiarities of economic relations in present conditions [Part I] / edited by A. I. Bazhan, K. N. Gusev, A. A. Maslennikov. – M.: Institute of Europe RAS, 2014. – p. 36.

²⁸ Order of the Government of the Russian Federation dated 03.11.2014. № 2195-р "Approval of an action plan to reduce the dependence of the Russian fuel and energy complex from the import of equipment, technical equipment, components and services (works) of foreign companies, the use of foreign software and the development of Russian oil and gas industry"

²⁹ Order of the Russian Ministry of Industry and Trade dated 31.03.2015 № 645 «Approval of an action plan to import substitution in the oil and gas engineering industry of the Russian Federation»

2014 in relation to 2013. Particularly, because of the depreciation the debt load (in local currency) has been increased to companies that actively appealed to currency borrowings in recent years. The debt of "Rosneft" in ruble terms has been increased by more than 30% (up to 2.5 bln. Rubles) in accordance to the results of the year 2014, but the debt load in dollar terms (taking into account the stability of sales revenues and the scheduled redemption of credit obligations) decreased (Table No.10).

Table No. 10: Financial indicators of the companies facing the financial sanctions

Company	Net income, bln. rub.		Current position (current ratio)		Debt load (net debt /EBITDA)	
	2013	2014	2013	2014	2013	2014
JSC Rosneft	551	350	1,0	1,2	1,8	1,5
JSC Gazpromneft	187	127	2,1	1,9	0,7	1,4
JSC Transneft	158	60	2,3	1,8	1,4	1,5

Source: I Pominova. Strength test//Oil in Russia. – 2015. - №11-12. [Electronic resource]. – access mode: <http://www.neftrossii.ru/content/test-na-prochnost> (accessed 25.02.2016)

JSC "Rosneft" is the leader in the sphere of oil production in Russia. The management of the company is convinced that the difficult economic situation will not prevent the company from achieving its objectives and goals. This is confirmed by the positive information of the last quarterly report. Sanctions and lower prices will not prevent the implementation of liabilities. The company "Rosneft" was able to reduce the net debt up to 39.9 billion dollars. (- 3.9 bln.) in the first half of the year 2015. Significant increase of drilling rates of new wells require diverting resources from the primary production, which affected the current production volumes - it was reduced up to 4.11 mb/d (- 0.15%, the data of the second quarter). Introduction of new wells will allow clearing the backlog in future. Through the efforts of the company, places for oil production in Russia will expand in the year 2016 due to commissioning of Suzun oilfield³⁰. Recently the JSC "LUKOIL" has actively modernized their refinery facilities by paying less attention to the exploration and development of new deposits. In 2015-16 years the company intends to refocus investment on mining. The 2-nd Russian largest oil producing company plans to stabilize its own production capacities due to the following fields: the oil-producing region "West Kurna 2" in the east of Iraq; "Prirazlomnoe" (West

³⁰ Oil production in Russia: statistical data [Electronic resource]. – access mode: http://www.syl.ru/article/209339/new_dobyicha-nefti-v-rossii-statisticheskie-dannyie (accessed 25.02.2016)

Siberia); "Filanovskii" (Caspian Sea). New capacities will compensate the production decline observed in oilfields of Western Siberia. However, the limitation of "Lukoil" access to international capital markets due to the sanctions challenges the success of the ambitious plans for further development and increase of production. Oil production in Russia and countries of CIS has been noticeably decreased. As a result, net export in June has been reduced by 204 kbb/d, the total amount was 8.92 mb/d. Reduced deliveries to foreign partners are fixed now for the first time this year: the volume and profits remain below last year's level for the second month in a row. Experts can see no basis for the improvement of the situation - exports continue to decrease. First of all, decreasing is observed in crude oil supplies for the 3-rd month in a row - they are currently at 425 kb/d lower than in 2014, but total annual dynamics was positive: the average exports for the 3-rd quarter of 2015 approximately corresponds to 2013-14., amounting to 6.25 mbbl/d (10 kb/d). The Government has initiated changes in the tax regulations in favor of the supply of crude oil against fuel oil. Transportation of oil through the BPS (Baltic Pipeline System) was noticeably increased - over 70 kb/d. In general, transportation of raw materials through the BPS system in July 2015 was approximately 4 mbbl/d, surpassing the figures of 2014 over 192 kbb/d.

"Rosneft" is facing most serious problems in payments of debts among the other largest Russian oil and gas companies - most of debts are formed as a result of the acquisition of TNK-BP in 2013 and denominated in currency (80%). According to the information from the company, in 2015 it has paid 10.9 billion dollars, in 2016 – it will pay 15.1 billion, in 2017-2018 it will pay - 16.8 billion and 18.1 billion more shall be paid in 2019 and later. So far, due to the advance payments (primarily for future deliveries in China) and a large-scale placement of ruble bonds, "Rosneft" manages with servicing of debt. Analysts estimate its financial situation as stable. However, the company has repeatedly requested to allocate the funds from the National Welfare Fund (NWF) for the full implementation of the investment program in the years 2014-2015, but did not receive support. JSC "Gazpromneft" has increased the amount of net debt in 2014, which is reflected in the increasing debt load, but it does not threaten the financial stability of the company. In 2015 it paid debt of approximately 60 bln rubles, and it has already received the long-term funding from "SberBank" and "Rosselhozbank". Approved company's investment program for 2015 anticipated a slight increase, and in September, it has been

adjusted by another 10% more. The debt load of "Transneft" company is stable (it is not planned to be increased up to 2017,) the volume of liquidity of the company is sufficient to carry out current payments. "Transneft" company should direct 650 billion rubles for capital investments (possibly at the expense of own funds) in 2015-2016, but the company assumes that this sum can be corrected. Concerning the other largest companies in the oil and gas complex, which do not apply direct financial restrictions; we can note insignificant debts and the availability of mostly ruble-denominated debts ("Tatneft", "Bashneft"). Overall, Fitch estimates that the credit status of Russian oil and gas companies is provided by the price of oil at 55 \$/barrel, but financial sanctions could adversely affect their ability to maintain investments. Capital investments in vertically integrated oil production complex were increased by 10% (up to 986 billion rubles) in 2014. Companies also tried to maintain investments and work places in 2015, but optimization is not excluded in the short term period. Restricting of access to western finance naturally leads to searching for cooperation in the East. The imposing of sanctions (with the absence of an express prohibition) called into question the continued involvement of Western companies in the Russian oil and gas projects and narrowed the ability to attract foreign investments (technologies, finances, management solutions) due to growing political risks. On the one hand, foreign companies have to take into account the new constraints - most of them have adjusted their plans in Russia (tab 11) during the years 2014-2015. On the other hand, as before, they have expressed interest in the Russian oil and gas industry (output of the projects, among other things, is often linked to them with tangible losses) and they are looking for ways to continue cooperation, requesting permission from the national regulators, by signing new agreements on oil deposits and activities not affected by the sanctions, implementing cooperation projects with Russian companies in third countries. For example, the US Corporation "ExxonMobil", actively cooperate with the "Rosneft" company, and under the pressure of sanctions has been forced to finish 9 of 10 joint projects in Russia at the end of September 2014, retaining cooperation in the "Sakhalin-1".

Table No. 11: Impact of sanctions on the presence of foreign companies in the Russian oil and gas industry

Company	Assets and plans in Russia in 2015, Russian partners	Impact of sanctions
ExxonMobil	«Sakhalin -1» (PSA, 30%) with «Rosneft»; Cooperation with «Rosneft» for offshore development in Arctic Regions and in Black Sea; Cooperation with «Rosneft» for development LTO in Western Siberia;	Most of projects with “Rosneft” were finished (in Arctic Regions and in Black Sea, JV in Western Siberia);
BP	19,75% shares of «Rosneft»; Memorandum for administration of joint venture for development of Domanic formations on the Urals with «Rosneft»	Strategic investments to «Rosneft» remain taking into consideration the sanctions; administration of joint venture with «Rosneft» for development of Domanic formations is suspended, but a new memo is signed for development of Taas-Yurahskogo deposit in Western Siberia (deal is pending)
Total	Haryaginskoe deposit (PSA, 40%) with «Zarubezhneft» and NNK; JV for development of Bazhenov formation with «LUKOIL»	Cooperation for development of LTO in KhMAD and in Salym Group is suspended
Statoil	Haryaginskoe deposit (PSA, 30%) with «Zarubezhneft» and NNK; JV for offshore development in Barents Sea and Sea of Okhotsk with «Rosneft»; JV for development of Domanic formations in Volga regions and crude oil in in KhMAD with «Rosneft»	Cooperation continues, but they are risky; Statoil receives the permissions for carrying out works for Russian projects
Eni	JV for offshore development in Barents Sea and in Barents Sea with «Rosneft»	Cooperation for this project is suspended; Eni receives the permissions for carrying out works for Russian projects, but they are risky;

Source: I Pominova. Strength test//Oil in Russia. – 2015. - No11-12. [Electronic resource]. – access mode: <http://www.neftrossii.ru/content/test-na-prochnost> (accessed 25.02.2016)

“ExxonMobil” brought a claim against Russia in the Stockholm Arbitration Court for the return of 500 mln. dollars of tax overpaid under the PSA in 2015. In turn, Russia has brought the company's environmental claims. Nevertheless, “ExxonMobil” and “Rosneft” continue to cooperate: there is a negotiation for the project for the construction of “Far East LNG” plant, submitted a joint application to participate in offshore projects in Mozambique.

However, the rapid development of oil complex in recent years has escalated the current negative trend in Russian oil production and refining:

- Significant depletion of major oil fields of main "oil" regions: Western Siberia, the Volga-Ural region and the North Caucasus;

- Irrational use of existing stocks of oil as a result of their "dilution"; Dilution - is the loss of quality of minerals, originating from the reduction of the useful component or utility component during its production compared to their content in the balance sheet stocks;

- Low reproduction of mineral base by the oil companies. The reproduction of the mineral resource base does not meet the rapidly increasing volume of oil production. With a significant reduction in the number of exploration work main increase occurred in the oil fields developed mainly due to the revaluation of the oil recovery factor. In the period from 1991 to 2007, Russian oil production exceeded the volume growth of oil reserves for 1 252 000 000 tones;

- Increase in the proportion of hard to recover reserves of oil. Share of hard to recover oil in its structure of the mineral resource has increased significantly up to 56% of the total reserves of crude oil in the past two decades in the Russian oil industry. This share will increase due to the commissioning of the oil fields located in the permafrost (the Arctic shelf, Yamal Peninsula) and in areas without the necessary industrial and logistics infrastructure (Eastern Siberia, Far East) in the long term period. Development of these fields due to the above specified reasons will require additional investments. Overcoming the above negative trends is a priority for the Russian oil complex enterprises in building up their strategies for sustainable development, since it is enterprises of the oil and gas industry are the basis of the Russian economy. The reduction of volume in oil production in Russia will not affect the domestic market of the country, it will influence the export. In addition, the Russian Federation significantly strengthens the already current "Eastern vector" of its energy policy. The problems of Russian oil export to the world market in terms of sanctions are reviewed in the next section of final qualifying work.

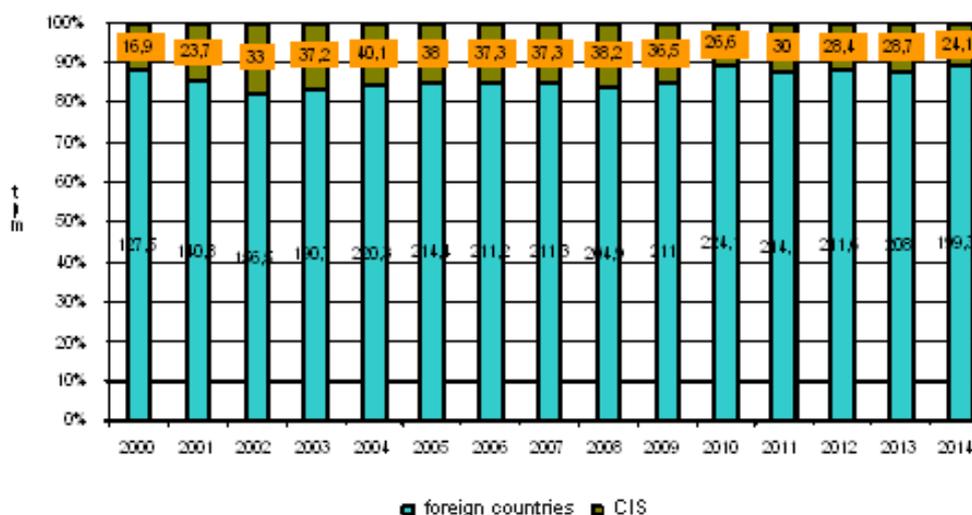
4.1.2 The problems of Russian oil export to the world market in terms of sanctions

The increase in Russian oil exports connected both with the increase in oil production and with the decline in domestic demand in the economic downturn. However,

positive effects of ongoing tax maneuver in oil industry should be noted³¹, an event which occurred for the first time in recent years and marked a decrease in oil production and an increase in export of crude oil, more effective for the state budget than export of black oil fuel.

The structure of the crude oil export from Russia to the regions of the world in 2000-2014 is shown in Graph No. 4.

Graph No. 4: Structure of the crude oil export from Russia to the regions of the world in 2000-2014.



Source: Export of crude oil by the Russian Federation during 2000-2015 (in accordance to the Russian Customs Service and Russian Statistics Committee) [Electronic resource]. – Access mode: http://www.cbr.ru/statistics/credit_statistics/print.aspx?file=crude_oil.htm (accessed 26.02.2016)

It shows that the countries of CIS are major importers of crude oil from Russia.

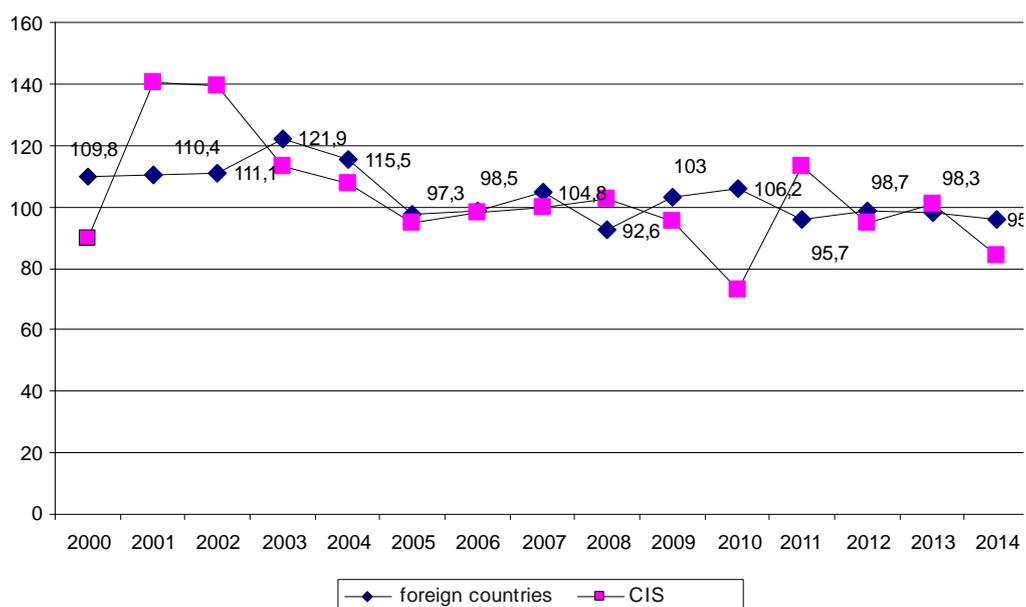
It should be mentioned that in 2014 more than 50% of Russia's oil export went to Europe and to the former Soviet republics, and only 24% was directed to the countries of East Asia (China, South Korea and Japan)³². Currently, Saudi Arabia, the United States and Iran have set their targets on the European oil market: it's worth mentioning that these countries are ready to increase supplies of oil in order to push Russia from this market.

³¹ Idrisov G.I., Sinelnikov-Murylev S.G. Modernization and preservation: the role of export duties on oil and oil products // economic policy. - 2012. - №3. - S. 5-19; Bobilev, J. tax maneuver in the oil industry // Economic development Russia.- 2015. - №8. - P. 45-49.

³² V. Popov. Will Russian economy spread to East?// PONARS Eurasia. Executive summary. – 2015. – № 376. August [Electronic resource]. – Access mode: http://www.ponarseurasia.org/sites/default/files/policy-memos-pdf/Pepm_376_rus_Popov_August2015.pdf (accessed 25.02.2016)

Saudi Arabia has already delivered the first batch of crude oil to Poland, and at lower prices than those offered by the Russian Federation³³.

Graph No. 5: Dynamics of growing rates of supplies of crude oil from Russia to the far abroad countries and countries of CIS in 2000-2014, %



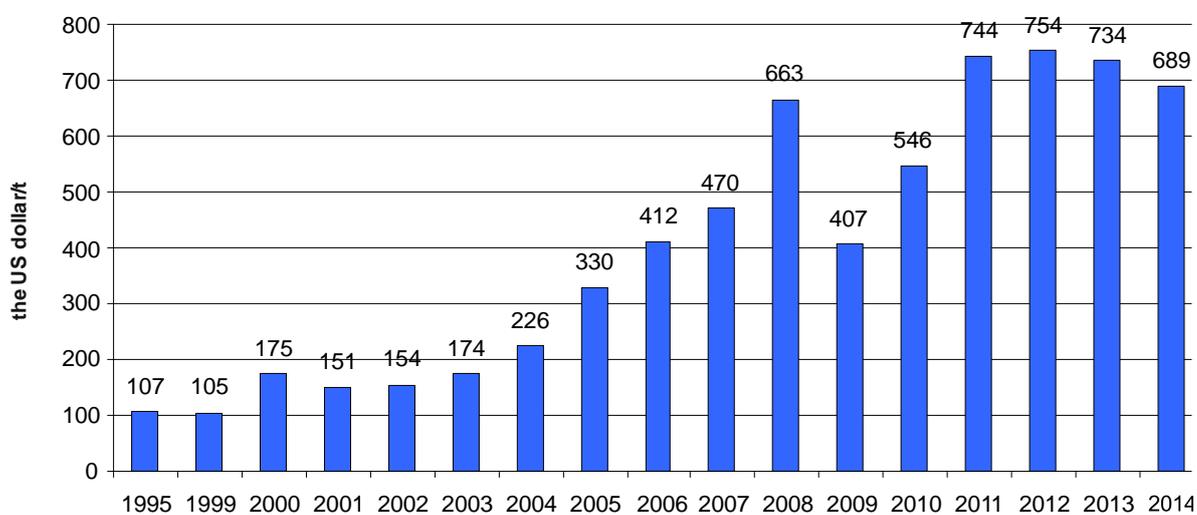
Source: Composed by the author in accordance to the data: Export of crude oil by the Russian Federation during 2000-2015 (in accordance to the Russian Customs Service and Russian Statistics Committee) [Electronic resource]. – Access mode: http://www.cbr.ru/statistics/credit_statistics/print.aspx?file=crude_oil.htm (accessed 26.02.2016)

Graph No. 5 shows the decrease in export of crude oil, while the rate of decrease of oil export to CIS countries is higher than to countries which are far abroad. In 2014 the supply of oil to far abroad countries was 4.2% lower than in 2013. It shall be pointed out that stable reduction of export deliveries of crude oil began in 2011.

Dynamics of changes of export costs for the crude oil in 1995-2014 is showed on the Graph No. 6.

³³ Counting barrels [Electronic resource]. – Access mode: <http://www.rg.ru/2015/10/20/neft.html> (accessed 26.02.2016)

Graph No. 6: Dynamics of changes of export costs for the crude oil in 1995-2014.



Source: http://www.cbr.ru/statistics/credit_statistics/print.aspx?file=crude_oil.htm

As it can be seen from the Graph No. 6 - in 2004 there was a steady increase of oil prices, and it reached its peak in 2008 (663 USD/t), but already in 2009 there was a market collapse in oil prices up to 407 USD/t. Again, prices for crude oil on the world market started growing in 2010-2011. But already in 2011-2014 there was a decrease in export prices for crude oil up to 744 USD/t. to 689 USD/t. Decreasing of oil prices will have a strong effect on the overall economic and financial position as of Petroleum Exporting Countries and also of its importers. On one hand, whether relatively low prices for oil will hold on one level for quite a long period of time, it will contribute to the recovery of economic activity of oil-exporting countries and reduce the severity of inflation, foreign trade and fiscal problems. On the other hand, such prices will negatively affect the oil-exporting countries, weakening their economic activity, tax liabilities and foreign trade positions. Low oil prices have a negative impact on the determination of investors to invest in the economy of oil-exporting countries and can lead to significant volatility in the financial markets, such as those that took place in some countries in the last quarter of 2014. For Russia as for other oil-exporting countries, slumping oil prices should serve as a stark reminder of the dangers of excessive dependence from export of resource-based

commodities and the need to diversify its economies and export policy³⁴. Current trends in the world's energy sector are able to weaken Russia's ability to provide adequate responses to system calls that put in front of her large-scale changes in the global energy, and maintain in the long run its status as a leading energy power state.

The most important of these challenges are the following:

The first challenge - expected decrease to zero marks of the growth rate of energy consumption and import in the European Union - a key sales market of fuel and energy products in the next two decades. Falling growth rates of energy consumption will be the natural result of the European Union in the framework of long-term energy policy aimed at all-round improvement of energy efficiency in all sectors of economic activity, including manufacturing, utilities and transport sectors, as well as reducing greenhouse gas emissions by reducing the use of consistent electricity and heat.

In accordance to the baseline scenario of the European Commission, the total energy consumption in the EU Member States in the 2010-2030's will be decreased by 0.9% to 1.611 billion t.; at the same time reducing energy consumption will be indicated throughout this period. Similar estimations are also revealed by other organizations, in particular, the IEA forecasts a reduction of primary energy consumption in the European Union from 2011 to 2030 by 0.3%. Net import will decrease in 2010-2020, in the European Union over 0.5%, however, in 2020-2030 it will begin to increase due to a general depletion of natural resources, export of electricity and population growth in the European Union. Growth of import in the EU will be achieved mainly by natural gas, import of which will be increased during 2020-2030 by 0.9%, while the total purchases oil and coal will remain at the same level³⁵. The second challenge is an increase of the international competition in the oil and gas markets of the leading countries-importers of Russian hydrocarbons, including the EU and China market. This will be facilitated, in particular, by the expected increase in the volume of oil production from unconventional sources, as a result of which new large producers and exporters of this type of fuel can occur in the

³⁴ V.P. Shuiskiy. Modern trends in international trade of goods in post-crisis era/Russian Economical News. – 2015. – T. 2015. – № 9. – P. 54.

³⁵ European commission [Electronic resource]. – Access mode: http://ec.europa.eu/energy/observatory/trends_2030/doc/trends_to_2050_update_2013.pdf (accessed 25.02.2016)

world³⁶. Another important factor for increasing of competition in the international energy trade policy is the action carried out by the leading countries-energy exporters aimed at ensuring its energy independence, including at the expense of maximum diversification of import sources of fuel resources³⁷. In particular, such a policy is already implemented for many years the United States, European Union and Japan. Currently, the EU provides only 46.6% of domestic needs in primary energy by domestic production³⁸. The growth of renewable energy production - which should cover almost 50% of Europe's energy needs by 2050 can hardly compensate for the decrease in the production of resources in the European Union. The situation until now is in favor of Russia, which holds a leading position supplying about one-third (35%) of all crude oil imported into Europe. In general, EU countries have to import approximately 85% of its needs for crude oil³⁹.

Crude oil balance on the European market is specified on the Graph No.7.

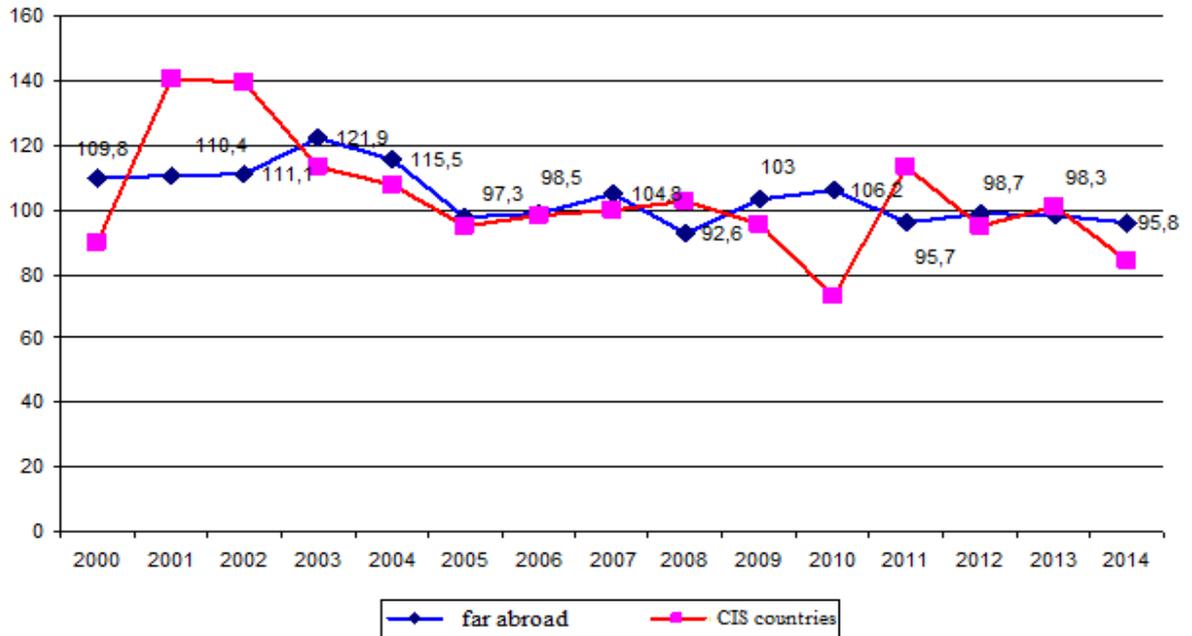
³⁶ D.I.Kondratov. The participation of Russia in the world energy market: development problems and perspectives// Russian Economical News. 2015. T. 2015. № 3. p. 91-105.

³⁷ Offerdal K. Arctic Energy in EU Policy: Arbitrary Interest in the Norwegian High North //Arctic. 2010. Vol. 63. № 1. P. 35

³⁸ M.S.Golovina. Economic aspects of regional energy security and export strategy of Russia in the gas market of the European Union countries. Thesis research. – M., 2015. – p.66.

³⁹ How Europe can be free from energy dependence from Russia [Electronic resource]. – Access mode: <http://inosmi.ru/world/20140917/223045089.html> (accessed 25.02.2016)

Graph No.7: Crude oil balance on the European market



Source: The forecast for development of world energy sector and in Russia up to 2040. – M., 2014. [Electronic resource]. – Access mode: http://www.eriras.ru/files/forecast_2040.pdf (accessed 25.02.2016)

Reducing the load of European refineries can be explained not due a slump in demand for petroleum products in Europe, and it is because of the displacement of the products manufactured in Europe by more cheap goods, manufactured in the Middle East and Asia-Pacific Region. In other words, in the middle of this period it becomes cheaper for Europe to import oil and no oil that still need to be processed at its plants. Towards the end of the period, when the volume of oil supply from the Asia-Pacific region and the Middle East will be more than consumed in these countries and in order to meet their growing domestic demand, the capacity utilization in Europe will stabilize, but until the end of the forecasted period it will not reach the level of 1990-2000. Influence of European countries on the oil market will continue to decrease, as well as their ability to provide its own demand. Technological sanctions are aimed at the off-shore, shale and Arctic projects in Russia. Currently, the domestic oil production is concentrated in the traditional producing fields, the hard to extract reserves is at the level of 6%, offshore projects (Baltic Sea off-shore, Caspian off-shore, and the Pechora Sea and the Sea of Okhotsk) – at about 3%. In accordance to the report from the Russian Ministry of Energy, the dependence of traditional deposits from foreign technologies and services is low (around 20%), for hard-to-recover reserves it increases up to 60-80%, and for offshore projects it exceeds 80%.

Therewith in order to maintain national oil production levels and share of hard-to-recover reserves and of off-shore in the long terms up to the year 2030, should expand by more than 2 times. Namely, in case of continued sanctions the technological limitations can be a serious obstacle to the planned growth⁴⁰. The possibility of effective use of renewable energy and non-conventional hydrocarbons (the same LTO (light tight oil) and shale gas) not only increases the overall energy resources. These new resources will have a serious impact on the development of world energy markets; it will change the balance of power and division of states into exporters and importers of energy. The consequence of this development can be a fierce competition, not only between different sources of oil and gas, but also between the areas of production. Specifically, the "shale revolution" and other similar technological and technical and economic innovations will intensify the competition in the international oil and gas markets, threatening the contraction, or even the closure of some of them for the import of energy resources.

Thereby, the main problems of Russian oil exports to the world market is dependent on the EU as of the main importer of crude oil, and increased competition in the supply of oil to the European market.

4.1.3 Opportunities for the supply of Russian oil to the world market

Russia - is not only a leading energy power country on the Eurasian continent. Its role as a transport energy bridge between East and West is also of utmost importance. Covering a large part of Eurasia and neighboring with South Asia, it can become a strong logistic link between countries and regions, rich with energy resources. Geographically, we can talk about the Middle East and Central Asia, as well as of Western Siberia and the off-shore of the Arctic Ocean. In this regard, Russia must timely and clearly define its place in the future world, in the global energy and transport infrastructure. There are five large geopolitical areas, with which our country borders, and is actively cooperating.

1. Countries of CIS.
2. Euro-Atlantic region (Europe and USA).
3. Asia-Pacific region (APR).

⁴⁰ I Pominova. Strength test//Oil in Russia. – 2015. - №11-12. [Electronic resource]. – Access mode: <http://www.neftrossii.ru/content/test-na-prochnost> (accessed 25.02.2016)

4. Middle East and Northern Africa.

5. Arctic field.

Fundamental factors of world political development and its impact for Russia the concept of Russia's foreign policy, approved by the President of Russia in 2013⁴¹, can observe the following points:

– Reduction of possibilities of the historical West to dominate over the world economy and politics. World potential forces and development disperses and is increasingly shifting to the East, especially in the Asia-Pacific region;

– Qualitative transformation in the energy sector. In particular it is related to the use of innovative technologies of production of hard-to-recover and unconventional hydrocarbons.

With the use of these objective processes Russia strengthens strategic partnership with leading producers and consumers of energy resources, as well as with transit countries. Also measures are being taken to secure the status of the key transit direction for Russian Federation and strengthening of trade and economic relations between Europe and the Asia-Pacific region. The use of the Northern Sea Route as a national transport communication in the Arctic, which is opened for international navigation on the basis of mutual benefit is becoming more and more important for our country. Russia is interested in active participation in the integration processes in the Asia-Pacific countries and using of the possibilities of the region for implementation of programs of economic recovery in Siberia and the Far East⁴².

Currently, significant changes take place in the global energy, it is becoming more balanced. According to the forecasts of the leading Russian and international organizations, by 2040 it is supposed to align in the main share of fuels - oil (26%), gas (24%), coal (26%) and non-fossil energy sources (in total - 24%). The development of inter-fuel competition will lead to the stability of energy supply⁴³.

In recent years, Russia has started to export oil to Asia through the pipelines. Construction of the Skovorodino-Daqing section of the East Siberian-Pacific Ocean oil

⁴¹ The Foreign policy concept of the Russian Federation Approved by the President of the Russian Federation – V.V. Putin on February 12 2013. [Electronic resource]. – Access mode: http://archive.mid.ru/brp_4.nsf/0/6D84DDEDEDBF7DA644257B160051BF7F (accessed 26.02.2016)

⁴² A. Mastepanov, V.Pervuhin. Towards the new energy civilization//Oil of Russia. – 2015. - №7-8. – p.11.

⁴³ A. Mastepanov, V.Pervuhin. Towards the new energy civilization//Oil of Russia. – 2015. - №7-8. – p.13.

pipeline (ESPO) was completed in 2011; it is designed for export of 15 million tons of oil per year over the next 20 years. Before this, oil was exported to China only by rail. The pipeline was to reach the port of Kozmino located near Nakhodka in December 2012. Russia signed an agreement with China for the sale of up to 31 million tons of oil annually in December 2013⁴⁴. The main economic growth will take place mostly in Asia in the coming years. China will become the world's largest economy. China imperatives for energy security, basically, are as follows. Firstly, increasing the demand and the dependence of the Chinese economy on energy resources. The level of China's dependence on foreign oil has reached 57% (for comparison, in the United States it is only 53%) in 2013, while 58.8% of China's imported oil is supplied mainly from the Middle East. However, in recent years the situation in the Middle East and North Africa has deteriorated significantly: armed conflicts and political destabilization occurred in this region. This situation has a negative impact on China's energy security⁴⁵. Secondly, transportation of hydrocarbons is constantly under threat. 80% of oil imported to China is transported by sea, but almost 90% of oil transportation services are made by foreign shipping companies. The United States in view of the increasing power of China is attempting to strengthen its military presence in the Asia-Pacific region and control many strategic sea lanes, including the Strait of Malacca. It is obvious that it restrains the expansion of the volume of energy transportation in China. Finally, it is the lack of strategic oil reserves. According to the official reports, the total volume of strategic oil reserves in China is 14 million tons, which is enough for not more than 20 days. It seems obvious that the scope of strategic oil reserves is far from the accepted high assessment to the International Energy Agency (IEA) in 90 days. In this connection, China hopes to provide oil to 850 million tons by 2020.

There are four main source regions for crude oil import in China - the Middle East, Central Asia (Caspian region) and Russia, and Africa. Remarkable changes have taken place in the structure of oil import over the past 15 years. As, for example, in 1998 the main suppliers of oil were Iran, Yemen and Indonesia, and by 2001 just Iran remained, and added Saudi Arabia and Oman, and since 2004 it has Russia, Angola, Sudan, Venezuela

⁴⁴ The same source

⁴⁵ O.A.Hlopov. Energy policy and strategy of China//Moscow State Regional University News. Series: History and political science. – 2015. – № 4. – p. 125

and Kazakhstan. However, Middle East countries continued to play a leading role: in 1998 their percentage was 61% of total deliveries, in 2004 - 45.4% and in 2009 - 50%. Also the place of Africa has also increased from 8% in 1998 to 30% in 2009 (mainly due to Angola, Sudan and Libya)⁴⁶. The main source of energy supplies for China is the Gulf region, its countries currently provides up to 44% of all import supplies to China. The strong dependence on Middle Eastern oil is a matter of concern in Beijing. Firstly, transportation of Middle East oil to China is made only through the Strait of Malacca, linking the Indian Ocean and South China Sea, which is characterized by the highest level of piracy. Secondly, the long-simmering tensions around Iran are a permanent risk of termination of supplies from the Persian Gulf region⁴⁷. Taking into consideration the political risks and instability in the region, China has expanded cooperation in the oil and gas sector with the countries of Central Asia and Russia in recent years. Laying of the Sino-Russian oil pipeline was completed in 2011. Sino-Russian oil pipeline starts from Skovorodino (Amur region), passes through the territory of Heilongjiang Province and Inner Mongolia Autonomous Region and ends at Daqing City. Through this pipeline Russia annually supplies 15 million tons crude oil to China. The parties entered into a contract for the supply of oil reserves for 20 years⁴⁸. Energy cooperation between China and Russia does not just mean economic benefits for both sides, but also strengthens the political mutual trust. According to the report of Ambassador of China in Russia, Mr. Li Hui in the article of the newspaper "Zhenmin Zhibao" on the eve of the official visit of the President of China Xi Jinping in Russia in the beginning of May, 2015: "The relations between Russia and China become a successful example of building a new type of international relations based on mutually beneficial cooperation. They play an important stabilizing role; contribute to the establishment of security and peace in the region and around the world. Moscow and Beijing have big plans for the future"⁴⁹. Russian-Chinese partnership has received a new impulse after the official negotiations and visit of Chinese President Xi Jinping to military parade on Red Square on May 9, 2015. At the end of the negotiations

⁴⁶ Will China replace Europe// Oil of Russia. – 2012. – № 1. – p. 96.

⁴⁷ R.S.Muhametov. Global energy perspectives of EU, Russia and China in Kaspian region// International Common and private law. – 2011. – № 4. – p. 19.

⁴⁸ China has finished opening four main energy corridors [03.02.2012] / China. Org.CN [site]. URL: http://russian.china.org.cn/exclusive/txt/2012-02/03/content_24545043.htm (accessed: 26.02.2016)

⁴⁹ Li Hui. Relations between Russia and China – way to peace and stability (notes of ambassador) // Zhenmin-Zhibao. 2015. May3. – Access mode: <http://inosmi.ru/fareast/20150508/227919451.html>. (accessed: 26.02.2016)

with the President of Russia, Russia and China signed a number of trade agreements relating to infrastructure, agriculture and transport. It is planned to increase the lending to Russian companies by Chinese banks to \$ 25 billion dollars in accordance to these agreements in the next three years. "Gazprom" and the CNPC Company have signed an agreement to supply natural gas to China in the amount of 38 billion m³ per year for 30 years, since 2018. The contract value is 400 billion USD. Gas will be supplied from the Yakutia and Irkutsk gas production centers through the main gas pipeline "Power of Siberia". During the visit, China and Russia announced 2016 and 2017 to be Sino-Russian media years. Signing of this agreement is positive for the strengthening of mutual trust and cooperation between the media services of China and Russia. This visit has demonstrated the mutual interest of countries to expand cooperation in investment, financial and energy sectors, interest in the Eurasian Economic Union, as well as the construction of economic belt of the Silk Road.

In the matter of conducting foreign policy, China believes it is necessary to rely both on its internal forces and the mechanisms of regional and international organizations, including the UN, as well as on the principles of international law. Interests of the energy, economic, geopolitical spheres justify the need for China to be present in Africa, in the Arctic, and to strengthen energy cooperation with Russia. In an effort to implement the national strategy for energy security, China directs its foreign policy interests in these regions in order to diversify oil and gas supplies, extending its zone of economic influence. The African continent is located in China economic priorities, one of which - the diversification of energy supplies routes. In an attempt to find a solution for some of the problems of energy supplies through the Malacca Straits and the Straits of Hormuz and implement a national strategy of energy security, China pays their interests towards the Arctic⁵⁰.

4.1.4 Chapter summary

Russia – is the fourth largest producer of energy in the world (after the OPEC, China and the United States) and the sixth among the largest consumers (after China, the US, the European Union, OPEC and India). It provides 10% of world production and 5%

⁵⁰O. A. Khlopov. Energy policy and strategy China //Bulletin of Moscow state regional University. Series: History and political science. – 2015. – No. 4. –p. 128.

of energy consumption; it is on the second place as oil exporter. Our country is an absolute leader in the supply of energy resources to the world market, covering 16% of inter-regional energy trade. The imposition of economic sanctions against Russia in 2014 exposed the weak points of its economy, its excessive dependence from the global market. The purpose of sanctions - to prevent the use of Russian technology projects related to deep-water oil exploration and production, oil exploration and production in the Arctic and the development of off-shore oil production. The main problems of oil production in Russia at the present stage are: a significant depletion of major oil fields in "oil" regions; low reproduction of the mineral resource base of oil companies; increase in the proportion of hard-to-recover oil. The main problems of Russian oil exports to the world market can be attributed as a dependency from the European Union from the main importer of crude oil, and increased competition on the European market in the supply of oil. Against the imposing of sanctions, the alliances of domestic oil and gas companies with western companies showed its instability. Western companies have started to come out of "compromised" projects (development of the off-shore, hard-to-recover resources) already during the first year, in spite of the interest in the Russian hydrocarbons, and Russian companies - become involved in more active negotiations with Asian companies. The stagnation of the European demand for crude oil and tougher competition for the growing Asia-Pacific markets reduce the potential for export niche for Russian producers. The situation is worsened by higher costs, compared to most other exporting countries, and taxes that actually makes Russian oil uncompetitive, leads to a decrease in exports in the baseline scenario and a negative impact on budget revenues, especially in conditions of low world prices. Russia should use the constructive potential of the Russian-Chinese strategic partnership, including the African and Arctic areas as the possibility to extend its spheres of political influence and economic development as a resurgent global power.

5 Results and Discussion

The subject of my thesis I chose because oil production is the closest for me theme. All my relatives, uncles, aunts and brothers are engaged in drilling, development, production, operation of oil and gas wells, and oil refining. Oil Workers Day is a professional holiday in our family; it is a holiday of my grandfather, who is almost 50 years worked in the oil fields, and stood at the origins of the formation drilling Bashkiria, Tatarstan, Tomsk region. The price of oil is very important for Russia, export earnings and revenues in the country enormously depend on oil and oil products. Export revenues are generated by oil at 70%, and the rate of the ruble to the dollar is largely determined by the volume of foreign exchange earnings to the country. The budget depends on the price of oil by 50% - it ensures the stability of the Russian economy and the impact on business taxation and incomes, on the political situation in the country.

Major players in the global market of oil production have been identified, in particular the US, Russia and China. It has been found that if Russia and the US - are the main oil-producing countries; China is the largest importer of oil. The paper shows that the United States in its energy policy (the transition from a net energy imports to their aggressive export) based on accelerated expansion of shale oil production.

When analyzing the current state of the world oil market, factors have been lined, which will contribute to the preservation of relatively low oil prices. The following factors have been attributed to the work: there are significant reserves of shale oil in the US, which will quickly get involved in the development and will increase the bid with an increase in world oil prices above \$ 60 / bbl; the economic slowdown in China; drop in OPEC discipline; increased tension in the relationship between Saudi Arabia and Iran, as well as an increase in oil supply by Iran as a result of the lifting of sanctions, related to the implementation of its nuclear program. In these circumstances, the most likely prospect of the oil market seems to remain low international prices in the coming years.

The work established that the last decade has witnessed the emergence of a new dimension of energy security. Increased competition in the global energy market between the US, Russia, and Saudi Arabia has been reported in hydrocarbon production and in supplies to major regional markets. It is shown that these countries account for 33% of world oil production, 41% of gas production. In addition, the United States in the next 5-7

years will gradually reduce oil imports from the Middle East, while expanding its presence as an exporter of hydrocarbons.

The paper shows that Russia is the fourth largest producer in the world of energy (after OPEC, China and the United States) and sixth among the largest consumers (after China, the US, the European Union, OPEC and India) and provides 10% of world production and 5% of consumption energy, is the second largest - oil exports. Russia is the absolute leader in the supply of energy resources to the world market, covering 16% of inter-regional energy trade.

It was found that the imposition of economic sanctions against Russia in 2014 exposed the vulnerabilities of its economy, its excessive dependence on the global market. It was determined that the purpose of sanctions - to prevent the use of Russian technology-related projects deep-water oil exploration and production, oil exploration and production in the Arctic and the development of shale oil production.

The main problems of oil production in Russia at the present stage have been identified. Which include: a significant depletion of major oil fields "oil" regions; low reproduction of the mineral resource base of oil companies; increase in the proportion of stranded oil. Also, the basic problems of Russian oil exports to the world market have been identified: dependence on the EU from both the main importer of crude oil, as well as increased competition in the supply of oil to the European market.

It has been established that in the context of the sanctions, alliances of Russian oil and gas companies with Western companies showed instability. Even in the first year, in spite of the interest in the Russian hydrocarbons, Western companies have started to come out of "compromised" projects (development of the shelf, TRIZ), and Russian - were involved in more active negotiations with Asian companies.

The paper shows that the stagnation of the European demand for crude oil and toughening competition for the growing Asia-Pacific markets reduce the potential for export niche for Russian producers. The situation is aggravated by the high costs and taxes, compared to most other exporting countries, which in fact makes Russian oil uncompetitive, leading to a decrease in exports in the baseline scenario and a negative impact on budget revenues, especially in conditions of low world prices.

The paper presents a proposal on the use of Russian constructive potential of the Russian-Chinese strategic partnership in particular in the African and Arctic areas. This is

possibility of expanding its sphere of political influence and economic development as a resurgent global power.

6 Conclusion

The following conclusions and recommendations can be provided as a result of the carried out research. Current situation in the oil market is characterized by a number of factors that will contribute to the preservation of relatively low oil prices. Among the most significant factors are the following: the existence of significant reserves of off-shore oil in the US, which will be quickly involved in the development and will increase the supply with an increase in case the world oil prices are above 60 USD/barrel; the economic slowdown in China; drop of discipline in OPEC; mounting of tensions in the relationship between Saudi Arabia and Iran, as well as an increase in oil supply by Iran as a result of the cancellation of sanctions, related to the implementation of its nuclear program. In these circumstances, the most likely prospect for the oil market is to save of low world prices in the coming years. The main players on the world market of oil production are the US, Russia and China. Whether Russia and the US - are the main oil-producing countries and China – is the largest importer of oil. The United States of America in its energy policy (the transition from a net energy imports to their aggressive export) based on forced expansion of off-shore oil production.

The last decade is marked with the appearance of a new dimension of energy security. The increasing of competition for the share in production of hydrocarbons on the international energy market and in supplying to major regional markets. First of all, it is a competition between the US, Russia and Saudi Arabia. They possess the 33% of world oil production, 41% of gas production. In addition, the United States will gradually reduce oil imports from the Middle East, while expanding its presence as an exporter of hydrocarbons in the next 5-7 years. Russia – is the fourth largest producer of energy in the world (after the OPEC, China and the United States) and the sixth among the largest consumers (after China, the US, the European Union, OPEC and India). It provides 10% of world production and 5% of energy consumption; it is on the second place as oil exporter. Our country is an absolute leader in the supply of energy resources to the world market, covering 16% of inter-regional energy trade. The imposition of economic sanctions against Russia in 2014 exposed the weak points of its economy, its excessive dependence from the global market. The purpose of sanctions - to prevent the use of Russian technology projects related to deep-water oil exploration and production, oil exploration and production in the Arctic and the development of off-shore oil production.

The main problems of oil production in Russia at the present stage are: a significant depletion of major oil fields in "oil" regions; low reproduction of the mineral resource base of oil companies; increase in the proportion of hard-to-recover oil. The main problems of Russian oil exports to the world market can be attributed as a dependency from the European Union from the main importer of crude oil, and increased competition on the European market in the supply of oil. Against the imposing of sanctions, the alliances of domestic oil and gas companies with western companies showed its instability. Western companies have started to come out of "compromised" projects (development of the off-shore, hard-to-recover resources) already during the first year, in spite of the interest in the Russian hydrocarbons, and Russian companies - become involved in more active negotiations with Asian companies. The stagnation of the European demand for crude oil and tougher competition for the growing Asia-Pacific markets reduce the potential for export niche for Russian producers. The situation is worsened by higher costs, compared to most other exporting countries, and taxes that actually makes Russian oil uncompetitive, leads to a decrease in exports in the baseline scenario and a negative impact on budget revenues, especially in conditions of low world prices. Russia should use the constructive potential of the Russian-Chinese strategic partnership, including the African and Arctic areas as the possibility to extend its spheres of political influence and economic development as a resurgent global power.

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8 Appendix – the Forecast for global oil demand in 2016, million barrels

World regions	2014					2015					2016				
	1 qrtr	2 qrtr	3 qrtr	4 qrtr	Total year	1 qrtr	2 qrtr	3 qrtr	4 qrtr	Total year	1 qrtr	2 qrtr	3 qrtr	4 qrtr	Total year
Africa	4,0	4,0	3,9	4,0	4,0	4,1	4,1	4,0	4,1	4,1	4,3	4,2	4,1	4,3	4,2
USA	30,5	30,5	31,3	31,5	31,0	30,9	30,9	31,6	31,1	31,1	30,9	30,9	31,5	31,5	31,2
Asia/Pacific	31,3	30,4	29,9	31,5	30,8	32,2	31,5	31,3	32,2	31,8	32,7	32,2	32,2	33,2	32,4
Europe	13,7	14,1	14,6	14,2	14,1	14,1	14,2	14,8	14,3	14,4	14,2	14,4	14,7	14,3	14,4
The former USSR	4,6	4,9	5,1	5,0	4,9	4,6	4,9	5,0	5,0	4,9	4,7	4,8	5,0	4,9	4,9
Middle East	7,7	8,2	8,4	7,8	8,0	7,6	8,3	8,6	8,1	8,2	7,8	8,4	8,8	8,2	8,3
Total in the world	91,9	92,0	93,2	94,0	92,8	93,5	93,9	95,4	94,8	94,4	94,5	94,9	96,4	96,4	95,6
Annual change (%)	1,3	0,6	0,8	1,2	1,0	1,8	2,0	2,3	0,9	1,7	1,1	1,1	1,1	1,7	1,2
Annual change, MB/d	1,1	0,5	0,7	1,1	0,9	1,6	1,9	2,2	0,8	1,6	1,0	1,1	1,1	1,6	1,2
Change to last OMR (MB/d)	0	0	0	0	0	0	0	0	-0,2	-0,1	-0,2	-0,1	0	-0,1	-0,1

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