

## **Dependence of the Russian Economy on Oil Prices in the Context of Volatility of the Global oil Market: Articulation of Issue**

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### **ABSTRACT**

At the present stage, oil is not just commodity but also a kind of asset, the value of which is associated with multiple financial processes. The impact of oil prices is particularly strong in the countries where trade in energy commodities has reached a high level in total exports. Russia belongs to such countries as well. Oil industry is one of the most important areas for supporting the economy development in Russia. Therefore, there is a need to develop measures for proper functioning of the oil industry, as it provides a significant share of Russia's gross domestic product and budget revenues. Besides, about 80% of foreign investment goes directly to the oil and gas sector. In addition, the long-term dependence of the Russian economy on energy resources has led to decline in incentives for the development of other industries and creation of new technologies. The article explores the issues of dependence of the Russian economy on global oil prices and factors that influence the situation on the global oil market; the increasing role of the financial market of oil contracts in the context of the current economic development is substantiated. This article examines the situation when the country's export is largely focused on energy, while other industries significantly lag behind; it is described in the economic theory as a phenomenon dubbed "Dutch disease." This phenomenon is described by increase in extraction and export of commodities; besides, the influx of capital from exports stimulates consumer demand, but the industrial sector fails to keep up with the growth of the household income due to the pressure of the "Dutch disease," which ultimately increases inflation. In addition, this results in lagging of the processing sector of the economy behind the extractive sector.

**Keywords:** Oil Market, World Trade Organization, Reserve Fund, Economy

**JEL Classifications:** O10, F10

### **1. INTRODUCTION**

Oil prices (both exchange and over-the-counter) are formed on the basis of two factors: The current and expected ratio of supply and demand, as well as the change in costs. The merits of exchange pricing undoubtedly include relative market transparency and high liquidity. Besides, it is highly competitive, because it is open to a wide range of participants.

Experts still argue over whether Russia suffers from "Dutch disease." For example, according to the Nobel Prize laureate in economics E. Maskin, a typical situation of "Dutch disease." was

observed in Russia in 2015; since it has a decent income from one source, the development of other sources is postponed. While getting rich from oil, Russia does not worry about anything else. The International Monetary Fund came to the conclusion in 2008 that the connection between Russia's economic growth and oil prices is misperception: According to its estimates, about 60% of the growth of the economy is the development of the domestic market, and the rest results from the contribution of oil prices (Danilov et al.). "Dutch disease" has gone, said Minister of Finance Anton Siluanov in early 2015 (Borodin, 2014). So far, many have agreed that Russia does not suffer from the "Dutch disease," but features its certain patterns (Borodin, 2014).

## 2. METHODOLOGY

OPEC used to have a significant impact on the market development and price regulation, but a sharp growth of prices, introduction of new technologies and discovery of new oil fields have led to increased market competition and weakening of its market positions on the global market. However, this system was short-lived, as oil overproduction and saturation of the global market led to a collapse in prices, which caused the need for a new pricing approach. This is how the market exchange system emerged.

Relevance of the topic lies in the fact that the global oil market has already been exposed to three large-scale crises and four local declines; in each period, oil price had strong fluctuations, which means that prices could half or double in a short period of time.

Methods of analysis, synthesis, as well as methods of comparison and generalization were used in the analysis of volatility of the global oil market, as well as dependence of the Russian economy on oil prices in current conditions.

## 3. RESULTS AND DISCUSSION

The global oil market underwent some changes every year, which had a direct impact on the entire global economy. The last fall in oil prices in 2014-2015 has a significant impact on the Russian economy, whether that is about a fall in gross domestic product (GDP), a fall in the national currency, or a budget deficit.

The global oil market has already been exposed to three large-scale crises and four local declines; in each period, oil price had strong fluctuations, which means that prices could half or double in a short period of time. For example, oil price fell from \$27.56 to \$14.43 per barrel in 1986. During the crisis in 2015, oil price in August was \$45.63 per barrel, while a year earlier the price was \$101.09 per barrel.

To date, Russia's dependence on the oil market is strongly pronounced in the fact that the fall in oil prices by more than 45% since 2015 has caused a drop in imports by 50% and a sharp fall in GDP, while the ruble rate halved (Shtrikov, 2013).

Based on the above information, it can be concluded that the Russian economy feels good in years when oil prices are rising or staying at a fairly high level. When the crisis starts on the global oil market - for example, in 1973, in 1998, 2008-2009, 2014-2015, - the Russian economy experiences recession: Budget deficit, rising prices, rising inflation, rising unemployment, declining production volumes. The situation repeated in 2016; oil prices fell below \$35 per barrel for the first time in many years, which led to a sharp drop in the national currency's exchange rate against reserve currencies and, accordingly, to a sharp increase in the euro and dollar; inflation reached 13% in 2015, budget deficit amounted to 2.1% of GDP in 2015, according to the Ministry of Finance much money was spent from the reserve fund. All this once again confirms that Russia is a country relying on oil resources, and the situation on the global oil market plays a significant role for it, especially the price of such energy resource as oil (Shtrikov, 2013).

In comparison with other oil-exporting countries, Russia is particularly dependent on the oil market. Since Russia receives most of the income from oil sales, the national currency automatically becomes dependent on oil price, effectively becoming an oil currency. In the event of the fall in oil prices, the budget deficit is increasing, and consequently the value of the national currency is decreasing (Silaeva et al., 2016). For example, the percentage of budget revenues from oil sales in the USA is only 1% to 2%, when in Russia this share is 50%.

In this regard, the issue of the need to develop recommendations for reducing the impact of oil prices on the Russian economy is relevant (Brodsky and Berezhnyatsky, 2012).

By the beginning of the XX<sup>th</sup> century, oil had become the major type of commodity in Russia's exports, the main markets being the United Kingdom and Germany. The oil syndicate of Rothschild-Nobel monopolized and controlled about 80% of extraction, processing and transportation of oil in Russia in the late XIX<sup>th</sup> - early XX<sup>th</sup> century (Tolstonogov, 2014).

Two energy crises followed, mainly caused by the reduction in oil production by the OPEC member states and subsequent sharp increase in oil prices despite the low demand on the global market (Borodin, 2014). These crises seared in the global economy, which was already described by high rates of inflation and unemployment at the time. The consequences of the crises included a reduction in oil consumption and an increase in its production in other countries (Mukaidekh and Mukaidekh, 2015). The reorganization of the market for long-term contracts followed, which at that time contributed to volatility of oil supplies in the context of fluctuating oil prices, so it was decided to set its price on the basis of short-term contracts and spot contracts. After switching to spot pricing, oil price was determined by the balance of supply and demand, as well as the balance of oil production and consumption, which is shown in Figure 1.

The balance was almost always maintained, and consumption was higher than oil production only sometimes - for example, consumption and production in 2015 was at the level of 0.9 million barrels.

Realizing this, Saudi Arabia and later other participants of the oil market adopted a new system called netback (net production price): This is a formula for guaranteed oil sales, where the proceeds from oil sales net of taxes look like an export duty and processing costs, as well as transportation and sales (Bokareva, 2006).

Determination of price on the global oil market is influenced by many factors (Figure 2).

With the appearance of new financial instruments and participants on the exchange, the oil market was dominated by financial factors, such as the change in the exchange rate, in particular of the US dollar, increase in the share of futures contracts, changes in the oil market situation and refinance rate (Bokareva et al., 2011). In turn, fund factors only stimulated price growth and laid the foundation for speculation. Another factor is the state of the US monetary system and the value of the dollar: Since the US dollar

is the main currency of global trade, including the oil market, the oil price is tied directly to the dollar (Borodin, 2014).

Macroeconomic dynamics also has a significant impact on the global demand and, consequently, price changes.

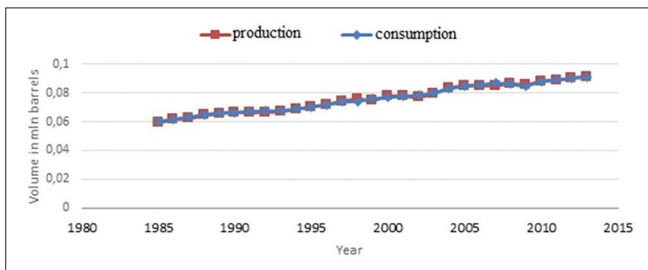
After switching to the stock exchange price system, new factors emerged that could influence the oil price. They are shown in Figure 3.

As we see, they are primarily the speed of exchange rate changes, quotation of securities, prices for other exchange commodities, share of speculations and investment. Nevertheless, for example, the decline in oil prices in 2014 went hand in hand with the dollar appreciation, which means that the same factors can result in both an increase and a decrease in oil price.

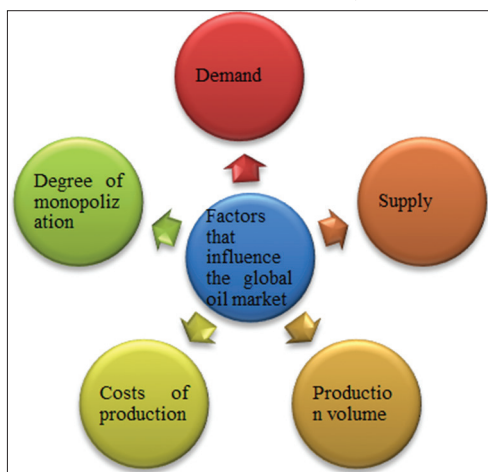
The economic sanctions of the European Union and the USA had a significant impact on the energy market in 2015; first of all, this led to a sharp weakening of the Russian national currency. As a result, economic situation of many enterprises and industries became more complicated, companies had to significantly reduce costs and increase productivity through their own funds and investment; besides, the situation on the currency markets and in the lending field worsened (Federal State Statistics Service, n. d.).

Talking about oil reserves in general, the development of the oil market in the last few years allows to conclude that oil reserves will last for a long time, since they make up about 150 billion tons.

**Figure 1:** Comparison of oil consumption and production in the world in 1980-2015, million barrels (Federal State Statistics Service, n. d.)



**Figure 2:** Factors that influence the global oil market (Federal State Statistics Service, n. d.)



They are distributed as follows (Figure 4):

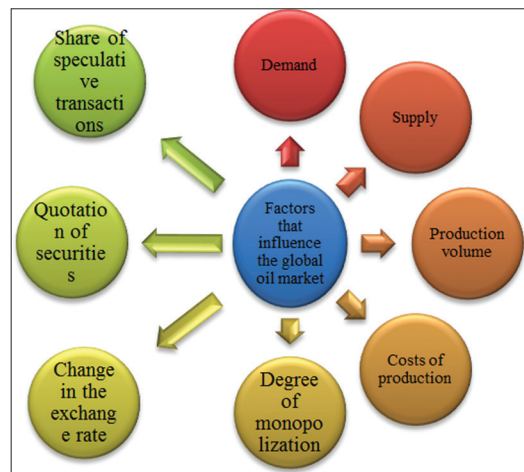
Venezuela is the richest in oil: About 9 billion tons falls for its territories, followed by Mexico – about 7 billion tons, and the USA – 3 billion tons. Two-thirds of the oil resources are in the territory of Muslim countries: Oil reserves in Saudi Arabia alone reach 36 billion tons, while about 12-14 billion tons are in the Persian Gulf countries, but they are not independent in the production and sale of this oil (Mukaidekh and Mukaidekh). In Russia, this figure is estimated as about 10 billion tons. In some regions, resources are exhausted much faster than the global average (Federal State Statistics service, n. d.).

Oil prices have been rapidly growing over the period from 1990 to 2015 (Figure 5).

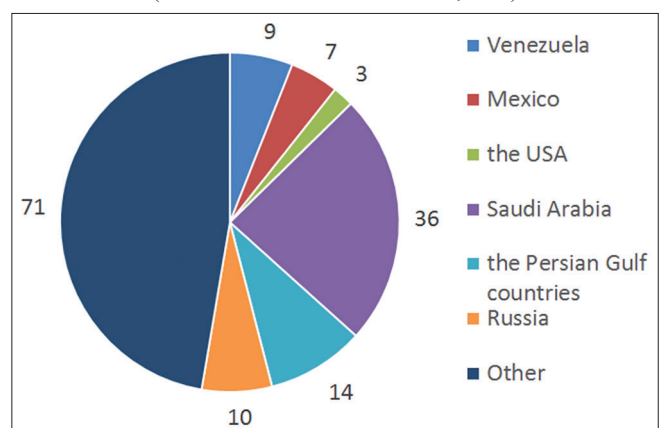
Against the backdrop of another financial crisis, oil prices collapsed to \$33.73 per barrel at the end of 2008; average prices in 2009 amounted to \$61.67 per barrel, Russia’s GDP growth rates declined by 7.8% against the previous year, which approximately amounted to \$587.9 billion.

In the middle of 2010, the average annual price level reached \$79.5 per barrel, while GDP growth amounted to 4.5% (Figure 6). Further, in the period from 2012 to 2013, due to reduction in US

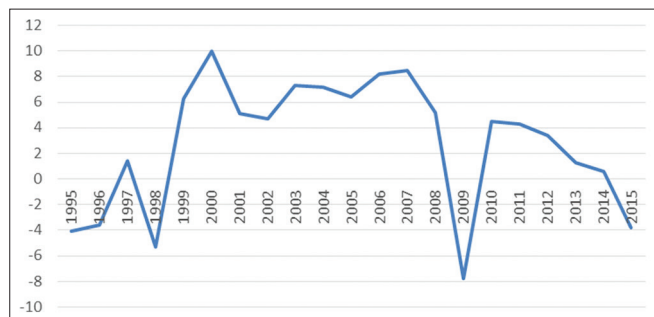
**Figure 3:** Factors that can influence the global oil market (Federal State Statistics Service, n. d.)



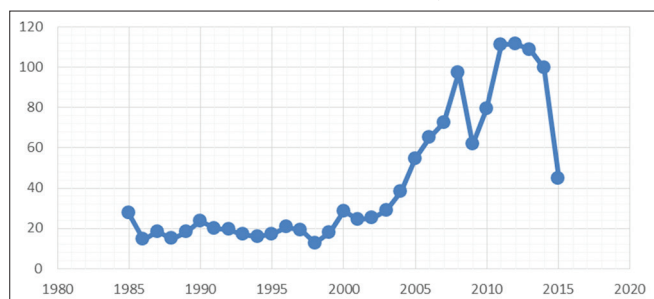
**Figure 4:** Distribution of oil reserves by countries, billion tons. (Federal State Statistics Service, n. d.)



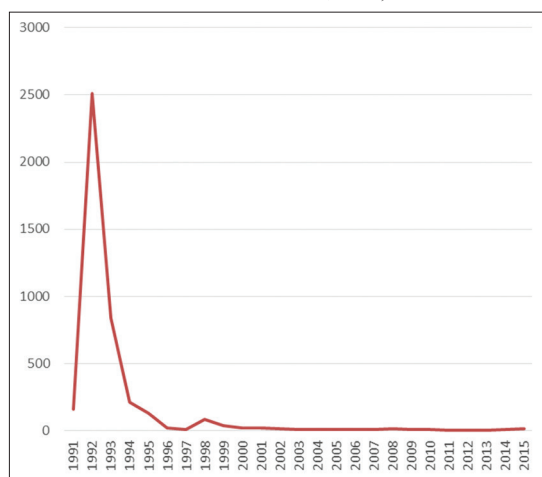
**Figure 5:** Dynamics of GDP growth in Russia from 1995 to 2015 against the previous year, % (Federal State Statistics Service, n. d.)



**Figure 6:** Dynamics of oil prices in 1980-2015, USD (Federal State Statistics Service, n. d.)



**Figure 7:** Inflation rates in Russia in 1991-2015, % (Federal State Statistics Service, n. d.)



oil imports and as a result of decline in speculation on the global market, the average oil price froze and stayed at \$105 per barrel. The growth of Russian GDP at the time amounted to 3.4% and 1.3% (Federal State Statistics service, n. d.).

In the first half of 2014, average oil prices amounted to \$107.75 per barrel; later, in the second half of the year, oil prices sharply declined due to a drop in demand for fuel in China and the USA and excessive supply of oil caused by increased supplies from Saudi Arabia. In October, the price for Brent oil had reached \$90 per barrel, followed by lower prices for export contracts by Iran and Saudi Arabia: In November, the price already reached \$80 per barrel. The total price drop over the year amounted to approximately 25% (Federal State Statistics service, n. d.). The

growth rate of Russia’s GDP in 2014 amounted to 0.6% against the previous year, or \$675.3 billion.

At the beginning of 2015, oil price fell below \$50 per barrel, followed by a slight growth. Then, prices leveled to \$66.33 per barrel in May 2015. However, the fall in prices began again in summer 2015, caused firstly by the crisis on the Chinese stock market and secondly by the increase in oil exports from Iran after the lifting of sanctions. On August 24, oil price fell below \$45 per barrel for the first time since 2009. The growth rate of Russia’s GDP decreased by 3.83% in 2015 - \$649.64 billion (Federal State Statistics Service, n. d.).

Oil price is understood as price for Urals crude oil, determined in accordance with the procedure for determining the export customs duty tariff for crude oil (Federal Law No. 184-FZ dated December 23, 2003). The dynamics of budget revenues in Russia in the post-crisis period noticeably improved in the period from 1999 to 2001. Revenues of the federal budget grew significantly against previous years.

Russia has experienced all kinds of inflationary shocks, including 22 hyperinflation, over the past 25 years (Makarenko, 2007) (Figure 7). Although it is generally assumed that there was no inflation in the USSR, this is far from the case, since the absence of a free market does not equal to real price stability. There was a sharp commodity deficit in the country in the 80s, the price growth rate was about 1.5% (Moseykin et al., 2011). The population of Russia has not faced open inflation until 1991 but experienced negative effects from the hidden inflation.

At the moment, the state of the Russian oil industry can be described as adverse due to the following factors: High degree of depletion of exploited oil reserves; lower quality; lower volumes of exploration and production drilling; lack of reserve of large deposits and, as a consequence, the need to include new unconfined deposits in hard-to-reach areas in production (Federal State Statistics Service, n. d.). Besides, the following factors can be added: Lack of investment sources; deterioration of the market situation - both domestic and global; heavy taxes, due to which a large part of the proceeds from production is allocated to cover various budget fees; low technological level.

Industry growth is important for the Russian economy. Therefore, elimination of the abovementioned negative factors requires to: Improve the taxation system, reduce the cost of oil transportation through improvement of the methodology for calculating the tariff for a service, renew the deductions from oil extraction for exploratory works on the search for new deposits, improve the technical facilities (Moseykin et al., 2011).

A new budget rule was enforced in Russia in 2013, which determined the maximum level of budget expenditures based on the oil price. This rule is one of the ways to isolate proceeds from oil sales through the formation of special budget funds. The budgetary rule is used as follows: The revenues exceeding the forecast value are transferred to the Reserve Fund; once the Reserve Fund reaches a certain threshold, the funds are sent to the

National Welfare Fund; the federal budget revenues are forecasted regularly, based on the estimated oil price – average for a set period of time. The cut-off price is calculated as the average oil price for a 5-year period, and it amounted to \$91 per barrel in 2013. In 2014, the cut-off price amounted to \$92 per barrel (Federal State Statistics Service, n. d.). As such, compliance with this rule provides Russia with additional funds in the event of a crisis while also reducing the dependence of the federal budget on oil prices on the global market.

Despite the crisis, the state oil fund of Norway reached 5.2 trln NOK, almost \$850 billion. Meanwhile, the Russian funds have accumulated only about \$89.96 billion by August 2014 (Borodin, 2014). However, due to the crisis, the Norwegian krone depreciated by 8.5% against the US dollar, and therefore the Norwegian government had to spend 3% of the state oil fund of the country or about \$21.8 billion, without conducting any large-scale “optimizations” to reduce government spending. At the same time, Russia opted for cutting the budget spending and supporting the banking sector, accompanied by extensive spending of funds from the Reserve Fund and the NWF. In total, about 10% of the NWF was provided for in the anti-crisis plan, which is approximately 459 billion rubles or \$6.65 billion (Federal State Statistics Service, n. d.).

In turn, the Reserve Fund has decreased by 20% since early 2015; part of the funds (about 500 billion rubles) were used to fund the budget deficit. In other words, Russia spent most of the funds from stabilization funds to help banks, while Norwegian banks do not need government help.

It is also important that Russia maintains traditional sales markets, such as Europe and China, as well as participates in international projects, which in turn will help reduce competition for Russian companies on the international market. However, not all projects carried out by Russia are economically feasible. Therefore, it is equally important to take into account economic interest rather than political interest in making decision in the oil field (Mukaidekh, 2015). For example, because of sanctions imposed by the European Union and as a result of the ban on a number of goods for the oil industry, Russia had to suspend a number of its oil projects instead of negotiating with Europe. An alternative option was to conclude an agreement with China on the construction of a joint oil pipeline. In addition, it is important to continue supporting projects to open new deposits at the moment.

#### 4. CONCLUSION

Nevertheless, no options proposed above are able to solve the problem of the dependence of the Russian economy on oil prices on their own. More radical measures are needed to cope with this problem once and for all, which are designed for a long-term perspective.

Examination of specifics of pricing in the global oil market revealed that it was oligopolistic in nature first, which means that a circle of sellers formed a supply on the oil market based on agreed prices – this, in turn, ensured the stability of oil prices. At

the same time, in the conditions of the modern global economy, the financial market plays a special role in the formation of oil prices, especially a sharp increase in the volume of futures and options contracts on exchanges driven by money supply in the USA. The role of speculators’ operations with commodities has increased, due to which actual oil prices can deviate significantly from the fundamental variables: Cost of oil production, prices for hydrocarbons used as raw materials, etc., All this results in vulnerability of the economies of oil-exporting countries against negative changes on the outer market.

Russia ranks among top places on the oil market. Nevertheless, the established and continuing dependence of the Russian economy on oil prices is one of the main sources of its imbalances. For example, with a high level of oil prices and an increase in exports, most of the funds from the national economy were sent to the oil sector, which, combined with the strengthening of the national currency, led to a decrease in the competitiveness of the Russian manufacturing industry and discouraged the development of new sectors of the economy. This slowed down the modernization of the entire Russian economy in the long run.

It would be advisable to clearly identify the goals of Russian funds and implement them; for example, the National Welfare Fund does not fully fulfill its purpose: Part of the money is spent by the government on the implementation of projects and support of state-owned companies in times of crisis.

All the above-mentioned factors must be taken into consideration to recover the Russian economy from the symptoms of the “Dutch disease;” their implementation can take several decades.

#### REFERENCES

- Bokareva, E.V. (2006), Monitoring ekonomiki Rossii (Monitoring of the Russian economy). Bulletin of the Tambov University. Series: The Humanities, 3-2(43), 126-128.
- Bokareva, E.V., Zhuravleva, N.V., Glinkina, E.V., Abrameytseva, E.A., Biryukov, A.N., Kozhukhova, O.S., Krutova, I.N., Khusainova, L.A., Chernov, S.S. (2011), Problemy Ekonomiki I Upravleniya Predpriyatiyami, Otrasyami, Kompleksami (Issues of Economics and Management of Enterprises, Industries, Sectors). Novosibirsk: Sibprint.
- Borodin, K.A. (2014), Perspektivy razvitiya neftyanogo kompleksa Rossii v usloviyakh tendentsiy mirovogo rynka nefi (Prospects for the development of the Russian oil sector in the context of global oil market trends). The RAS Institute, 40, 43.
- Brodsky, B.E., Berezhnyatsky, A.N. (2012), Analiz Strukturnykh Sdvigov v Modeli Rossiyskoy Inflyatsii (Analysis of Structural Changes in the Model of Russian Inflation). Moscow: CEMI RAS.
- Danilov, A.A., Danilova, V.A., Litvinova, E.V. (2014), Osnovnyye napravleniya razvitiya potrebitelskogo rynka tovarov i uslug na makro i mezourovnyakh (Key areas of development of the consumer market of goods and services on macro and mesolevels). Service in Russia and Abroad, 5(52), 18-30.
- Federal Law No. 184-FZ Dated December 23. (2003), “O Vnesenii Dopolneniy v Byudzhethny Kodeks Rossiyskoy Federatsii v Chasti Sozdaniya Stabilizatsionnogo Fonda (Concerning the Introduction of Amendments to the Budget Code of the Russian Federation Regarding the Creation of the Stabilization Fund). Rossiyskaya

- Newspaper. Available from: <https://www.rg.ru/2003/12/27/fond-dok.html>. [Last retrieved on 2017 May].
- Federal State Statistics Service. Available from: <http://www.gks.ru/>. [Last retrieved on 2017 May].
- Makarenko, A.A. (2007), *Korporativnaya Finansovaya Politika Kak Instrument Upravleniya Finansami (Corporate Financial Policy as a Financial Management Tool)*. Dissertation for the Degree of Candidate of Economic Sciences. Moscow: Moscow State University of Service.
- Moseykin, Y.I., Mukaidekh, E.A., Malovichko, I.I. (2011), *Ekonomicheskaya Politika Gosudarstva (Economic Policy of the State)*. Moscow: PFUR Publishing House.
- Mukaidekh, E.A. (2015), Problema zavisimosti rossiyskoy ekonomiki ot konyunktury kolebaniy mirovogo rynka nefi i perspektivy yeye resheniya (Problem of dependence of the Russian economy on the fluctuations of the global oil market and the prospects for its solution). *Bulletin of the Bryansk State University*, 1, 314-316.
- Mukaidekh, E.A., Mukaidekh, A.R.A. (2015), Mirovoy ryok nefi: Sovremennoye sostoyaniye i prognozyne otsenki (Global oil market: Current state and predictive estimates). *Humanitarian, socioeconomic and social sciences*, 11-2, 61-63.
- Shtrikov, A.B. (2013), Istoricheskiye i sovremennyye faktory izmeneniya nefyanykh tsen (Historical and modern factors of changes in oil prices). *Bulletin of Samara State Technical University*, 3(9), 62-68.
- Silaeva, A.A., Karmanova, T.E., Atamanova, M.A., Podsevalova, E.N., Mityurnikova, L.A. (2016), Peculiarities of improving internal financial control in the Russian corporations. *Journal of Applied Economic Sciences*, 11(7), 78-86.
- Tolstonogov, A.A. (2014), Otsenka riskov dlya rossiyskoy ekonomiki pri sokhraneni sushchestvuyushchikh negativnykh tendentsiy v nefyanom komplekse (Assessing risks of persisting negative trends in the oil sector for the Russian economy). *Bulletin of the Samara State Technical University. Series: Economic Sciences*, 3(13), 45-50.