Assessment of the Oil and Gas Sector Influence on the Parameters of the Budget System of the Russian Federation

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Abstract. The article reveals the role of oil and gas revenues in the formation of the federal and regional budgets of the Russian Federation, as well as the channels of oil prices influence on budget system revenues. The stages of forming the government’s position on the development of the oil and gas section are highlighted and characterized. The oil and gas sector taxation transformation is disclosed based on the interests of the state and business. The global oil prices dynamics impact on Russia macroeconomic indicators and the monetary and fiscal regulatory tools selection was assessed.

1. Introduction
The recess and deceleration of economic development and the difficulty of government expenses decrease together with problems of resources mobilization through internal government loans necessitate an increase in budget revenues. Budget revenues are among the main macroeconomic indicators, reflecting, on the one hand, the country's economic security and the performance of economic entities, and, on the other, the possibility of pursuing an effective policy to finance government expenses (including investment and social) and, as consequence characterizing the possibilities of the future country development. The oil and gas sector plays a leading role in generating revenue for the budget system and the trade balance. In 2018, the share of oil and gas revenues in the federal budget was 46.3%, and 24.4% in the consolidated budget, and the share of crude oil, oil products, natural gas and diesel fuel export was 60.3% (64.79% for mineral products) Due to the adjustment of the mineral extraction tax rate and the export duty, taking into account global oil prices, the dependence of the federal budget revenues on the dollar exchange rate is manifested primarily in terms of oil and gas revenues (Fig. 1).

There are different indicators for the country's dependence on the minerals extraction assessment, and the analysis shows that the Russian economy is not overly dependent:
- the share of oil exports in GDP amounted to 9% in Russia in 2018, while it reached 27% in Kazakhstan and 9% in Norway;
- the volume of oil and gas production in Russia is 2,327 dollars per capita (14th place), while it is 31,554 dollars in Qatar, 16,004 dollars in Kuwait, and 14,305 dollars in Brunei;
- crude oil production per day: Russia ranks first (11.36 million barrels), Saudi Arabia has 10.0 million barrels, and the USA has 9.0 million barrels.
At the same time, the budget system of Russia remains dependent on oil and gas revenues, which is why the government must make informed decisions regarding the modernization of the taxation sector, taking into account the interests of the macro and micro levels. It is important to take into account the increased competition in the global oil market, which necessitated the implementation of emergency measures to support national oil companies. The US government acts the same way, not only reducing the corporate income tax rate from 35 to 21%, but also providing additional benefits to oil companies, the largest of them did not pay tax. The tax burden on the Saudi Arabia oil industry has been significantly reduced from 85 to 50%. This allowed the United States to become a net exporter of oil again for the first time since the mid-1950s, and the oil companies share of revenues from oil refining, as well as gas- and petrochemical productions, significantly increased in both countries.

As a result, in order to maintain its position in the global oil market, Russia is forced to look for opportunities to create new high value-added products manufacture increase conditions and prevent the oil products retail prices growth in the domestic market over the annual inflation rate.

2. Relevance of the topic

The modern Russian Federation oil and gas complex structure was formed as a result of the transformations that took place in the mid-1990s, when eleven vertically integrated companies and two regional companies were formed. As a result, there are about 30 large oil refineries currently in operation. The development of the Russian oil and gas sector is characterized by both positive and negative trends:

- significant volatility of the global oil prices - from $ 11.7 per barrel in 2000 to 110.5 dollars per barrel in 2012, $ 41.6 per barrel in 2016 and $ 59.8 per barrel. in 2019;
- production and exports slowdown - the growth rate of oil production with gas condensate decreased from 5.9% in 2000 to 1.6% in 2018, crude oil export from 7 to 13% over the same time;
- large share of fuel and energy products in the export commodity structure above 63.7%;
- oil refining monopolization level increase - in 2001, three companies accounted for about 50% of oil production (LUKOIL 21.3%, NK YUKOS 16.3%, OAO Bashkhimneft 13%), in 2018 - 79% (PAO NK Rosneft 48%, PAO LUKOIL 18%, PAO Surgutneftegaz 13%);
- modernization of oil refineries, thus the total coverage for fifth-class environmental gasoline and diesel fuel demand with own products was achieved - the share of investments in the crude oil and natural gas production amounted to 7.1% in 2018. However, some companies reported a
modernization investments growth rate slowdown, as well as a slowdown in the growth rate of investments aimed at processing, commerce and logistics (Table 1).

Table 1. Dynamics of oil refineries modernization investments in large Russian oil companies, bln rubles.

| Year | Rosneft | Lukoil | Tatneft | Gazpromneft |
|------|---------|--------|---------|-------------|
| 2015 | 629 / 109 | 607 | 97 / 26 | 349 / 32 |
| 2017 | 922 / 87 | 511 / 60 | 89 / 36 | 357 / 80 |
| 2018 | 936 / 77 | 550 / | 93 / 34 | 380 |

Source: Calculation based on the annual companies’ reports.

- a high share of low added value products export, but together with the increase in the oil refining depth from 71% in 2000 to 71.2% in 2010 and 83.4% in 2018;
- complication of oil production conditions - the degree of proven reserves depletion exceeds 55%, and the increase in reserves is achieved mainly due to additional exploration of the deposits in use;
- constant tax innovations - the main areas of tax policy approved by the government annually cover a three-year period and do not take into account industry specifics associated with a long (over five years) exploration cycle. Despite the introduction of an additional income tax (taking into account the specifics of mature deposits), the government tax policy is not always consistent, since it is aimed not at system changes, but at the provision of individual benefits;
- maintaining restrictions on the activities of private oil companies (offshore fields could be developed only by state-owned companies, and private companies can only develop LNG projects in Russia if they started before 2013);
- inefficient use of subsidies given to the oil refining industry: since 2005, the total amount of subsidies amounted to 11.2 trillion rubles, of which only 2.8 trillion rubles were spent on modernization;
- the presence of a government assistance program for the petrochemical cluster enterprises, including oil refinery modernization agreements;
- sensitivity to the sanctions introduced since 2014, which were initially applied to the PAO NK Rosneft and PAO Novatek companies and then were extended to PAO Transneft, PAO Gazpromneft, etc. Then a ban was imposed on equipment export to Russia for shale deposits and Arctic deposits, to finance the largest oil companies, as well as the technological sanctions were expanded, etc.

In addition, the position regarding Russia's participation in OPEC agreements remains ambiguous - a number of experts believe that these agreements should be kept.

3. Task statement

The problem of natural rent as a kind of payment for the use of mineral resources in global practice has been relevant since the beginning of the 1960s, when the process of land and mineral resources, which considered state strategic resources, transfer to ownership by private companies has started. The situation is different in the Russian Federation, since the state is the owner of the subsoil, but it seeks to compensate economic entities for the costs associated with the development of deposits, development of production and financing of environmental measures. The problem of the Russian economy dependence on the oil and gas and the directions of its structural restructure are disclosed in the works of S. Yu. Glazyev, V. I. Maevsky, V. A. Mau, O.S. Sukharev and others. Most Russian economists are V. Volkonsky, R. S. Grinberg, A.Kuzovkin, A.F. Mudretsov, Yu.V. Sinyak, and others support the "classical" theory of rent, i.e. natural resource rent is considered by them, first of all, as a source of state revenue from natural resources belonging to it, the extraction of which should be used to equalize the profitability of production in different sectors. Another group of economists (A.S. Andryushin, V.V. Ivanter et al.) considers rent from the micro level point of view and believes that the magnitude of its withdrawal by the state should provide companies with the possibility of expanded
reproduction. At the same time, some experts believe that the taxation of Russian oil companies is excessive, leading to the fact that the share of their profit is 10-15% of total revenue. This is the position of Kartovenko I.V. [9], Yumaev M.M. [21] and others. Moreover, the mineral extraction tax (MET) based on the export duty on oil to the Urals price and introduced in 2002 instead of payments for the use of subsoil resources, fees for the reproduction of the mineral resource base and excise taxes to simplify tax collection is considered the most expensive part of rent. The transformation of extracted minerals taxation can be described as an increase in the total tax burden when individual tax benefits have been granted since 2007. During this period, the tax has undergone repeated adjustments: a reduction in the rate for developed deposits and the regional tax holidays (2007), the establishment of export duty privileges for certain regions (2009, 2011), and a change in the system of establishing export duties (2011), reducing the mineral extraction tax rate for small deposits (2012), indexing the mineral extraction tax rate (2012-2013), introducing a “tax maneuver” (2014), establishing benefits for hard-to-recover and offshore deposits (2013), introduction of a dedicated formula for calculating export fees (2017), changes in calculation formulas and KDPI (2002, 2004, 2007, 2011-2017).

As a result, the NDPI rate on mineral extraction tax for oil reached 329.77 rubles at the beginning of 2002. (calculation formula 340Kts, 744.76 rubles/t (347Kts) in 2004, -1599.74 rubles/t (419Kts) in 2005... - 8028.8435 rubles/t (919Kts(1-KvKzKdKdvKkan) - Kk) in 2017, -12,953 rubles/t (919Kts(1-KvKzKdKdvKkan) - Kk - KABdt - KmANsvn in 2019 (Kts - coefficient characterizing the dynamics of global oil prices, Kv - coefficient, degree of reserves depletion for a particular subsurface site, Kz - reserve coefficient, Kd - coefficient characterizing the complexity of oil production, Kdv - coefficient used in the production of hard-to-recover oil, Kkan - coefficient taking into account the region of production and oil properties, Kk – add-on coefficient of 428 rubles until 2021, the remaining additional coefficients are established in connection with the introduction of a “negative” excise tax and are calculated using special formulas.). Thus, unlike export duties, the MET rate increased, including due to the introduction of additional add-on coefficients. However, the taxation did not take into account expenses associated with oil and gas production, and, as a result, did not create conditions for stimulating capital investments.

Moreover, certain government decisions can be considered erroneous - 1) the introduction of customs export duties on oil and petroleum products, which led to an increase in shortfalls of the budget revenues; 2) the establishment of reduced export duties on residual oil, stimulating the production of products with low added value and budget loss; 3) the introduction of increased export duties on gasoline compared to diesel fuel, which has become one of the reasons for the deficit of gasoline, etc.

In the context of the federal budget deficit in 2011-2017 the government decided to review the tax policy for the oil industry again, and the expert estimations varied. After all, it was planned to gradually reduce the export duty on oil, amounting to 30% of its total cost (until it is completely canceled) with an increase in the tax rate on mineral extraction by a similar percentage until 2024 and the introduction of a differentiated excise tax (decreasing coefficient of 0.833 for 2019, of 0.667 for 2020, 0.5 for 2021, 0.333 for 2022, 0.1667 for 2023). Moreover, it is envisaged that the existing tax incentives provided for the production at new offshore fields, gas condensate for LNG production, fields with difficult conditions (developed, small subsoil plots, areas with hard to recover oil), fields in the Yamalo-Nenets Autonomous Okrug, etc. are maintained. According to the forecasts of the Government of the Russian Federation by 2024, it is planned to receive 1.3-1.6 trillion of additional income from these novations. Thus, a reasonable question arises - to what extent are the benefits of the enterprises of oil exporters and the state related. So, as a result of innovations, the tax on the extraction of oil and oil products is transferred to the mineral extraction tax:

- oil production – increase the mineral extraction tax rate, and oil export duty rate is reduced to zero;

1 The rate of 2019 is calculated as the average of I quarter based on data from PAO Rosneft.
oil purchase – increase in the cost of raw materials while reducing the duty to zero and the occurrence of negative excise tax (compensation of the raw materials cost increase for refineries);

- petrochemicals manufacture and purchase – the export duty is reduced to zero, and when selling on the domestic market, the selling price increases and the negative excise tax is introduced.

Such measures are taken by the government in order to solve several problems: to create conditions for the modernization of industry enterprises, promote a more profitable export of oil and oil products, increase the oil supplies to the domestic market, increase the prices growth for the oil for refining on the domestic market, and thereby ensure replenishment of budget system revenues. However, this matter is still somewhat obscured. On the one hand, representatives of large oil companies positively estimated tax innovation, believing that "the adopted version of the tax maneuver in the Russian oil industry makes its losses minimal." This new regime was approved by employees of the Ministry of Finance of the Russian Federation, who insisted on its early introduction, justifying it by the fact that it would be possible that many companies that did not produce oil, but only resold it and produced oil products for export will lose the profit. G. Fedotov, Vice President of PАО LUKOIL, emphasized that naturally this option may not be perfect for all market participants, since companies differ in the location of oil refineries, the share of oil production, etc., therefore, it is important to have a stable tax policy and invariable excise taxes. Obtaining a negative excise tax (essentially, a tax deduction) is possible if the average price of refined products deviates from the real price by 10% max. In addition, compensation for negative excise tax will be made only to those refineries that use modern equipment and make products in accordance with international environmental standards. Moreover, the change in taxation of the sector has become one of the most important reasons for rising gasoline prices.

Utilizing the approach, proposed by B. Titov, for the assessment of the oil and gas sector share in the budget system revenue we admit that, notwithstanding the government attempts to reduce its dependence on the oil and gas revenues, it had only increased. This trend is common both for the federal budget of the RF and for the consolidated budget (Table 2).

**Table 2.** Russian budget system dependence on the oil and gas revenues.

| Year | Annual increase, bln roubles | Oil and gas revenues | Share of oil and gas revenues, % | Federal budget |
|------|-----------------------------|----------------------|---------------------------------|---------------|
|      | Consolidated budget         |                      |                                 |               |
|      | Total revenues              |                       |                                 |               |
| 2008 | 2801                        | 1492                 | 54                              | 1495          |
| 2009 | -2609                       | -1405                | -                               | -1938         |
| 2010 | 2472                        | 847                  | 34                              | 967           |
| 2011 | 4823                        | 1811                 | 37                              | 3063          |
| 2012 | 2580                        | 811                  | 31                              | 1488          |
| 2013 | 1008                        | 81                   | 8                               | 164           |
| 2014 | 2323                        | 900                  | 39                              | 1477          |
| 2015 | 156                         | -1571                | -                               | -838          |
| 2016 | 1259                        | -1019                | -                               | -199          |
| 2017 | 2866                        | 1128                 | 39                              | 1629          |
| 2018 | 6273                        | 3046                 | 48                              | 4365          |

Calculated based on data from [https://www.minfin.ru/ru/statistics/conbud/#](https://www.minfin.ru/ru/statistics/conbud/#).

It is common to focus on the share of oil and gas revenues while defining the role of the oil and gas sector in the budget system - the share of the tax on the extraction of minerals and export duties. To assess the role, in addition to oil and gas revenues, we consider it necessary to take into account other revenues from companies in the oil and gas sector, including tax payments on income tax, as well as dividends received by the state as a shareholder of these companies (table 3).
Table 3. Share of Fuel and Energy Complex (FEC) companies’ payments to the Russian budget system.

| Years | Total revenues, bln rubles | Oil and gas revenues, other FEC revenues, bln rubles | Share of oil and gas revenues, other FEC revenues Consolidated budget, % | Federal budget, % |
|-------|----------------------------|-----------------------------------------------------|------------------------------------------------------------------------|------------------|
| 2008  | 16169                      | 4689                                                | 29                                                                     | 51               |
| 2009  | 13560                      | 3539                                                | 26                                                                     | 48               |
| 2010  | 16032                      | 4482                                                | 28                                                                     | 54               |
| 2011  | 20855                      | 6615                                                | 31                                                                     | 58               |
| 2012  | 23435                      | 7503                                                | 32                                                                     | 58               |
| 2013  | 24443                      | 7693                                                | 31                                                                     | 59               |
| 2014  | 26766                      | 8705                                                | 32                                                                     | 60               |
| 2015  | 26922                      | 7240                                                | 27                                                                     | 53               |
| 2016  | 28181                      | 6092                                                | 22                                                                     | 45               |
| 2017  | 31047                      | 7537                                                | 24                                                                     | 50               |
| 2018  | 37320                      | 10567                                               | 28                                                                     | 54               |

Calculated based on data from https://www.minfin.ru/ru/statistics/conbud/#, https://www.rbc.ru/economics/22/08/2019/5d555e4b9a7947aed7a185de, http://vseobankah.ru/poleznoe/2985-dividendy-gazproma-za-2018-god-040906.html, https://www.rosneft.ru/press/releases/item/196033/.

Considering that the state owns a 50.2% stake in Gazprom, by the end of 2018 the amount of dividends paid amounted to 196.6 billion rubles, Rosneft paid 120 billion rubles, and Tatneft with a state share of 34% - over 41 billion rubles. As a result, the contribution of FEC companies to the budget system in 2018 exceeded 29%.

Regarding regional budgets, although oil and gas are produced in more than 30 constituent entities of the Russian Federation, mineral extraction tax on hydrocarbons is not provided for them, but regular payments are made to regional budgets for mining as part of the implementation of production sharing agreements (with the exception of natural combustible gas) the standard rate is 5%. The largest tax amounts were collected in three “oil” constituent entities of the Russian Federation - the Khanty-Mansi Autonomous Okrug-Yugra, the Yamalo-Nenets Autonomous Okrug and the Republic of Tatarstan, and the total share of the Khanty-Mansi Autonomous Okrug-Ugra, the Yamal-Nenets Autonomous Okrug and Moscow amounted to 49% of the country's tax revenues. So, as of 2018, total tax revenues to the federal budget in the Russian Federation increased by 30%, and by 1.5 times in most oil-producing regions.

At the same time, there is a discussion about the appropriateness of transferring 30% of the mineral extraction tax on hydrocarbons into the regional budgets (this proposal has been submitted to the State Duma of the Russian Federation, but the government is actively opposing it). The main arguments for such a proposal are an increase in the own tax base of oil and gas producing regions of the Russian Federation and a decrease in their subsidies, arguments against it are a significant amount of federal budget deficits and a decrease in incentives for regions to increase their tax revenues. And if you can agree with the first argument “against” this proposal, then the second is difficult, since many regions do not have enough funds to cover the priority expenses.

4. Analysis of the starting results of the "large tax maneuver"

Based on the average exchange rate, the reduction coefficient in export duties and the price of Urals crude for three months in 2018 and 2019, we may assume that the mineral extraction tax increase due to the oil export duties decrease allowed the largest exporters to improve their financial result by more than 13% (the difference between the cost of sales, mineral extraction tax and the customs duty in 2019 equaled 4,465.1 rubles/lt). At the same time, the global oil prices decline was offset by an increase in the exchange rate. According to the new budget regulation introduced in 2018, if the global
oil price exceeds the established threshold ($ 40 for Urals brand oil), all additional oil and gas revenues are allocated not to finance government spending, but to replenish the reserves. That is, the Ministry of Finance of the Russian Federation used the excess income to acquire currency on the Moscow Exchange, which was listed in the National Wealth Fund, increasing the instability of the Russian ruble and increasing the demand for foreign currency. The daily volume of currency interventions amounted to 15.6 billion rubles from January 15 to February 6, 2019 (foreign exchange interventions were also carried out by the Bank of Russia in the following months). Over the next three years, the government plans to allocate about 8.776 trillion rubles to purchase foreign currency, but to invest these funds only in foreign projects. Thus, we may assume that the banking regulator implementing this decision decided not to follow the “floating” exchange rate policy, the implementation of which is mandatory as part of the transition to inflation targeting. According to the results of 2018, the inflation rate amounted to 4.2%, which exceeded the planned level. The exchange rate increased over the year by 17.5%. As a result, the regulator was forced to toughen its monetary policy and increase its key rate to 7.5% in September 2018 and 7.75% in December 2018.

5. Conclusion
The recent development of the oil and gas sector in Russia has been influenced by the intensification of negative factors - a slowdown in the growth of oil production and export, complication of oil production, global prices volatility, increase of the oil refining monopolization level, etc.

Permanent tax innovations in the extraction sector led to the tax burden increase for oil and gas companies, including periods of global energy prices decline.

The increase in global prices for Russian oil, which has resumed since 2017, has led to an increase in the dependence of the budget system on oil and gas revenues, thus in 2018 the oil and gas sector provided 48% growth in consolidated budget revenues and 70% in the federal budget.

We consider it appropriate to assess the contribution of the Fuel and Energy Complex to the Russian economy, taking into account both mineral extraction tax and customs duties, and all other taxes and dividends paid to the state as a shareholder. This assessment option allows you to determine the real contribution of the sector to the country's economy.

The transition to the final stage of the “tax maneuver” and changes in the tax regulations led to increased instability in the currency exchange market and tougher monetary policy. In this regard, facing the slowdown in the citizens' incomes growth, it seems appropriate to adjust the budget regulation.

In 2018, amid a decrease in the average annual dollar against ruble exchange rate, basic oil and gas revenues decreased, but additional oil and gas revenues increased more than 5 times. In such circumstances, the government had to use other sources of financing the budget deficit - an increase in domestic loans. At the same time, the National Welfare Fund was used, which, on the one hand, contradicted the current legislation, and on the other hand, contributed to the surplus of the federal budget.

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