

Modern problems of the oil industry development and their impact on the financial stability of oil production enterprises

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Abstract. The oil industry is one of the main key points in the economies of Russia and Iraq, therefore, the state, social and economic life of the country depends on its productivity, functioning, and stability. The oil industry has several tasks: improving energy efficiency, modernizing equipment, and innovative developments. The oil industry has experienced ups and downs over the years, but the 2020 crisis hit the industry harder than in all years. The long-term decline in oil demand paints highly unfavorable prospects for the future. The Covid 19 crisis was the worst in the history of the oil industry. As companies and entire industries recoil from its effects, oil prices continue to fall. The pandemic has reduced the demand for oil to such an extent that the industry is unable to adapt to such a sharp decline. And the buildup of oil reserves further lowers fuel prices. This article is devoted to the reflection of the algorithm and the substantiation of the practical application of the developed automated model of analysis and forecasting of the financial condition of an enterprise using regression analysis in assessing the financial indicators of an oil production enterprise. In the course of the research, the methods of logical, statistical analysis were used. The developed prototype of an automated model for complex analysis and forecasting of the financial condition of oil production enterprises is a good basis for creating a full-fledged commercial system for the oil production business. It is concluded that the new automated model of analysis and forecasting provides an opportunity to analyze the financial condition of an oil production enterprise, including the identification of its financial difficulties and the study of financial attractiveness, as well as to predict the financial condition of an oil production enterprise within almost any time interval, determining ways to overcome its financial difficulties and increasing financial attractiveness.

1 Introduction

Despite the disappointing forecasts, according to the results of the first quarter of 2021, one can see positive results: business activity in the global industrial market is showing positive dynamics, the industrial PMI index has reached 55 points, this is the maximum in the last 10 years. Brent crude oil consolidated at a price above \$ 60 per barrel, average daily oil and gas production in Russia decreased by 10%, but compared to the previous quarter, the overall

operating results in the oil industry improved by 1.5%, decreased by 6.8%, and exports - by 17.5% compared to last year.

Thus, at the end of the first quarter of 2021, oil prices increased significantly. Brent futures have added 22% since the beginning of 2021.

In 2020, Russia and Iraq, like the entire world community, faced a significant deterioration in the economic situation (a sharp drop in oil prices on world markets, a decrease in demand from world oil prices. Lack of investment has also become a big problem, which abruptly stops the development of the industry. [3, 4].

The business models of the oil companies have not adapted well to the realities of our time in the face of the pandemic. They are faced with volatility in demand and prices, competition from renewable energy sources, pressure from society. Therefore, oil companies weathered the 2020 crisis with dismal results. Many companies have reduced and abandoned the extraction of fossil energy resources, switched to renewable energy sources, and other areas of business.

In order for oil companies to pursue a policy of economic sustainability, it is necessary, in his opinion, to distinguish and pursue goals. The goal of international oil companies is to add value.

What is needed to improve competitiveness? The first task is to reduce the cost of production. It is necessary to reduce the cost of the oil production process and adapt it to the changing realities of life. Company managers need to learn to make many small engineering decisions, rather than focus on every problem.

The second important task is the development of technology. Many international companies suffered during the crisis precisely because they invested large sums in innovative, expensive technologies. Therefore, companies need to correctly distribute the budget and scrupulously select objects for investment.

The third task is to reduce emissions of greenhouse gases, that is, carbon raw materials. As the global community is increasingly concerned about environmental friendliness, oil companies should consider cheaper and more environmentally friendly production methods. Moreover, it will also reduce taxes. (Table 1).

2 Materials and methods

The methodological basis for the creation of an automated model was the economic analytical and predictive model of analysis and forecasting of the financial condition for oil production enterprises proposed by the author.

The following can be highlighted as possible directions for the practical use of the presented automated model of analysis and forecasting of the financial condition of an oil production enterprise:

- analysis of the investment attractiveness of an oil production enterprise and forecasting measures to improve it;
- diagnostics of financial difficulties of the oil production enterprise and forecasting of measures to overcome them.

An additional advantage of this model is the absence of user participation in the calculations. To do this, you only need to fill in the initial data for a comprehensive analysis and forecasting, as a result of which all indicators will be calculated [1].

The data obtained will allow determining the directions for improving the financial condition of the oil production enterprise based on the rating assessment and regression analysis of the financial condition, as well as provide the model users with a basis for making management decisions regarding the future activities of the oil production enterprise [2].

In this regard, the author has developed a calculation algorithm for the implementation of a comprehensive analysis and forecasting of the financial condition of the oil production enterprise (Fig. 1) [2].

This calculation algorithm was developed in Microsoft Excel.

In general, a block diagram of the algorithm for determining the results of the dependence of Y on X per 1 unit. measurements are shown in (Fig. 2).

3 The essence of the financial stability of the oil company

Financial stability reflects such a state of financial resources in which an enterprise, freely maneuvering funds, is able, through their effective use, to ensure an uninterrupted process of production and sale of products, as well as the costs of its expansion and renewal [5].

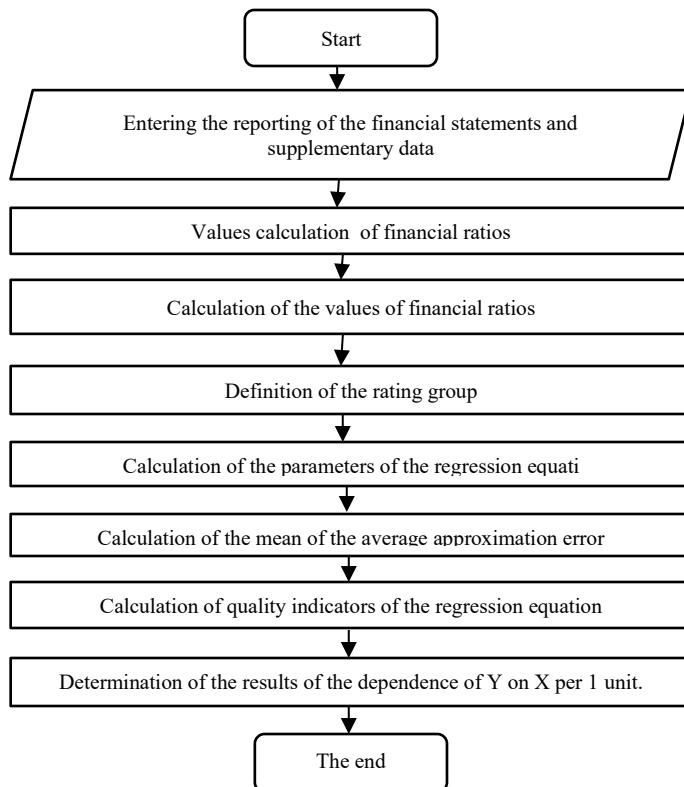


Fig. 1. Block diagram of the calculation algorithm in the implementation of complex analysis and forecasting of the financial condition of an oil production enterprise.

Source: compiled by the author

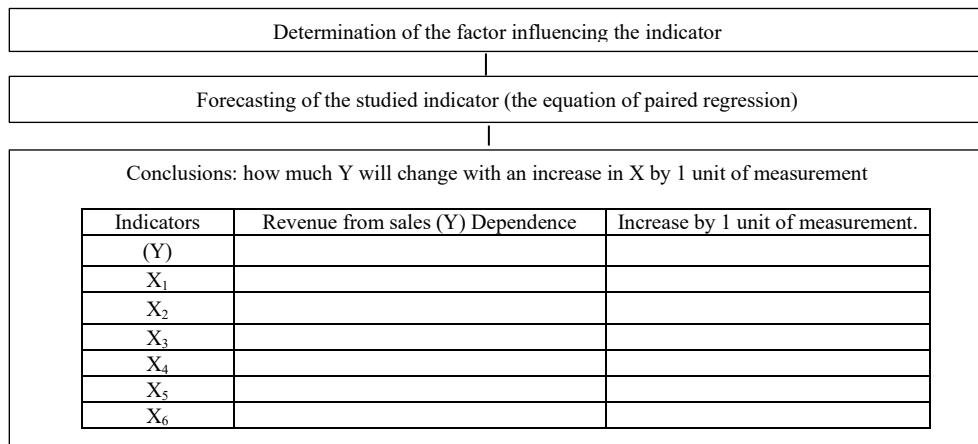


Fig. 2. Block diagram of the algorithm “Determination of the results of the dependence of Y on X per 1-unit measurements”

Source: compiled by the author

A company is financially stable if the distribution and use of financial resources ensures the development of the organization based on the results of growth in profits and capital while maintaining solvency and creditworthiness under conditions of an acceptable level of risk [3].

The management of financial stability in the oil industry reflects the system of economic relations in which enterprises form effective demand, as well as ways, with a balanced attraction of credit, to provide investment in production and an increase in working capital from their own sources from their own sources, create financial reserves and participate in budgeting. In market conditions, the economic activity of an oil refinery and its development is carried out at the expense of its own sources of formation, and if its own sources are insufficient, it is carried out at the expense of borrowed funds. At the same time, an important characteristic of the enterprise's activity is the indicator of financial stability.

«Rosneft» showed high figures for such indicators as EBITDA. The second indicator that indicates financial stability is free cash flow, thanks to which the company managed to reduce its financial debt by \$ 5.7 billion. According to Andrianov, «Rosneft» manages to achieve financial stability due to a competent technological policy.

According to the results of 2020, Rosneft is the only company that has reached a net profit, respectively, the net profit will be distributed in the form of dividends among shareholders. In terms of production of liquid hydrocarbons, Rosneft maintains a leading position in the world. In 2020, the amount of net debt decreased by \$ 9.7 billion. At the end of the reporting year, the amount of liquid financial assets and the available volume of credit lines almost 3 times exceeded the short-term part of the financial debt.

The economic situation and the consequences of the pandemic did not affect the Lukoil company in the best way. For 2020, revenue decreased by 28.1% over the previous year. EBITDA almost halved, by 44.4% compared to 2019, from 1,236.2 to 687.1. Net income attributable to equity holders decreased 97.62% for the year. In addition to the decline in EBITDA, profit was negatively impacted by non-monetary asset impairment and foreign exchange losses. Thus, the financial stability of Lukoil has fallen sharply over the past year.

Gazpromneft's profit also declined. Net profit decreased by 3.4 times compared to 2019, revenue decreased by 19.5 %, and EBITDA – by 1.7 times. A comparative analysis of the oil companies Lukoil, Rosneft, and Gazpromneft is presented in (Table 1) [6, 7, 8].

Table 1. Comparative analysis of the financial results of the companies "Rosneft", "Lukoil", "Gazpromneft" for 2019 - 2020.

	Gazpromneft		Lukoil		Rosneft	
	2020	2019	2020	2019	2020	2019
Revenue	1 999 620	2 485 308	5 639 400	7 841 246	5757000	8676000
EBITDA (million rubles)	415 375	711 846	687100	1 236 000	1 209 000	2 105 000
Profit attributable to equity holders	117 699	400 201	15 200 000	640 200 000	147 000 000	705 000 000
Free cash flow (million rubles) **	117 416	173 834	281 000	701 900	425000	941000

Based on the proposed automated model for analyzing and predicting the financial condition of an oil production enterprise, the possibility of practical application was studied on the example of existing Russian and Iraqi enterprises, such as: Oil Company Lukoil (Russia); Oil Company Bashneft (Russia); Basra Oil Company (Iraq); Missan Oil Company (Iraq), using published financial statements on official websites [1].

As a result of the calculations of the key indicators for assessing the financial condition of the studied oil companies, rating groups of financial stability were automatically determined, the results are presented in (Table 2).

Thus, we see that the visibility of the data obtained proves that the automated model of analysis and forecasting of the financial condition proposed by the author makes it possible to calculate the key indicators of the financial condition and determine the belonging of the oil production enterprise to a certain rating group of financial stability in automatic model [1].

Table 2. Determination of the rating group of the studied oil companies, score.

Period	Lukoil Oil Company (Russia)	Bashneft Oil Company (Russia)	Basra Oil Company (Iraq)	Missan Oil Company (Iraq)
2017	33	32	41	35
2018	34	32	43	36
2019	31	30	42	37
2020	25	39	43	38
Rating group	Unsatisfactory financial condition	Unsatisfactory financial condition	Normal financial stability	Normal financial stability

Source: compiled by the author

Russian oil companies mainly belong to the third group of the rating, which corresponds to an unsatisfactory financial condition. Iraqi oil companies belong to the second group of the rating, which corresponds to normal financial stability.

The obtained rating values of the studied oil companies allow us to conclude that it is necessary to forecast (predict) the financial condition of the company, using the method of regression analysis, in order to understand the driving trends and to understand the further development of the oil production enterprise under study.

Regression analysis presupposes a certain number of actions, which are combined into several general stages [4]:

- study of the qualitative characteristics of the investigated object.
- building a communication model.
- checking the constructed model for adequacy and calculating the data.
- analysis of the results obtained and their interpretation, taking into account the specifics of the investigated object [4].

Thus, the method of regression analysis of financial condition is the simplest, most accurate and effective for determining the amount of current assets in the forecast period.

4 Conclusions

Thus, the article discusses the practical use of an automated model for analysis and forecasting of the financial condition of an oil production enterprise. During the consideration of this issue, the following was done:

1. It is shown that an automated analysis model can be used and implemented in practice, while using the initial data of financial statements both in accordance with Russian RAS standards, and in accordance with international IFRS standards.

2. Actions with the values of key financial ratios and the rating number are determined in the course of using the automated model for analyzing the financial condition.

3. Specific calculations were performed using an automated model of analysis and forecasting of the financial condition of an oil production enterprise in the areas of its practical use.

To carry out experimental calculations in order to confirm the possibility of practical application of this automated model developed by the author, specific calculations were performed in the following areas of its practical use:

- A comprehensive analysis of the financial condition of the leading Russian and Iraqi oil companies was carried out;

- Calculations of key indicators for the oil production industry were made and rating groups for the studied oil companies were determined;

From the obtained results of the application of the automated model proposed by the author for the comprehensive analysis of the financial condition, it seems possible to determine the directions for improving the financial condition of the oil production enterprise, as well as provide the users of the program with a basis for making managerial decisions regarding the future activities of the oil production enterprise. The introduction of an automated model for analyzing and forecasting the financial condition of oil-extracting industry enterprises gives tangible positive results in the form of additional benefits.

The main advantages of using the automated model proposed by the author include the following:

- improving the accuracy of calculations.
- minimizing calculation errors.
- performing a large number of calculations in a short time.

In the future, it is planned to establish the interaction of this automated model of analysis and forecasting of the financial condition with other common automated accounting software products (for example, such as 1C: Enterprise or 1C: Accounting) and also create the ability to integrate the report into Microsoft Excel, which will increase the practical significance of the proposed the author of an automated model for complex analysis and forecasting of the financial standing of an oil production enterprise.

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