Risks, Analysis and Evaluation

FINANCIAL STABILITY RATIOS OF THE WORLD'S LEADING PUBLICLY TRADED OIL AND GAS CORPORATIONS AS AN INDICATOR OF THE INVESTMENT ATTRACTIVENESS OF DOMESTIC VERTICALLY INTEGRATED OIL AND GAS COMPANIES

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Abstract

Subject. The article considers the main financial stability ratios of the twenty five leading publicly traded oil and gas companies within 2006 through 2018.

Objectives. The study aims to determine the current level of values of the main indicators of financial stability of the leading publicly traded oil and gas companies, as well as identify the key trends in their changes within the studied period, and establish factors that caused those changes.

Methods. For the study, I used the methods of comparative, financial and economic analyses, summarizing financial reporting data.

Results. The article reveals certain deterioration of the key indicators of financial stability of the leading publicly traded oil and gas companies within the studied period. The article finds that the global financial crisis as a whole did not have a significant negative impact. A decrease in the book value of assets as a result of revaluation, as well as the implementation of mergers and acquisitions with the attraction of an impressive corporate-wide debt capital can have a serious negative impact on the financial stability of companies in the industry. The trend towards improvement of financial stability indicators was outlined in the stock market sector of the industry after the industry crisis.

Conclusions and Relevance. The leading oil and gas companies are able to pay off their own debt obligations in times of crisis. The findings can help evaluate, forecast and develop measures to improve the financial stability of publicly traded oil and gas companies.

Introduction

No doubt, scientific research aimed at studying various areas of financial and economic activities of the largest domestic oil and gas corporations have been remaining in great demand for many years. This relevance is dictated by the fact that the structure of industrial production and merchandise exports in the Russian Federation is still characterized by raw materials, where the oil and gas sector plays a key role. Indeed, the

total proceeds from the sale of oil, natural gas and their refined products make up a rather tangible part of the budget and form the basis of the country's reserve fund.

Consequently, the leading oil and gas companies have a tremendous impact on the Russian economy. All major industry companies in the country have the status of publicly traded joint stock companies, whose shares are freely quoted on the Moscow Stock Exchange, and their depositary receipts are presented on leading foreign trading floors. Therefore, it is quite logical that domestic oil and gas corporations also prevail in the stock market sector of the country's economy. Moreover, the oil and gas industry continues to be in key positions on the scale of the entire global stock market sector.

At the same time, the situation with prices for raw materials is not particularly stable in the global oil and gas market. So, two other industry-wide shocks have occurred since the beginning of this century, along with the recent oil crash fueled by the breakdown of a cutback deal between Russia, Kazakhstan, Azerbaijan and the Organization of Petroleum Exporting Countries. Indeed, the global financial and purely sectoral crises were previously accompanied by a long-term and tangible decline in the level of oil prices (*Table 1*). However, average annual oil prices reached their highest levels for the entire studied period in the range between these shocks.

Of course, such dynamics testifies to the fact that it is very difficult to predict oil quotes in a rather narrow confidence interval of values, even for the medium term. Then it turns out that the indicators of profitability of oil and gas companies can vary in a wide range of values. It is quite natural that such a factor becomes of no small importance in such a situation as financial stability, which characterizes the ability of a publicly traded oil and gas company to pay off its own debt obligations.

Of course, the issues of financial stability are given serious attention in domestic science, which is confirmed by the impressive number of works that the authors publish on this topic. But those among them that are devoted to the very method of analysis [1] and the development of models [2] of the company's financial stability deserve special attention. At the same time, scientific works that directly affect the oil and gas sector are of the greatest interest. Thus, all kinds of sustainability indicators are considered within the framework of a comprehensive analysis of performance results [3] and an integral assessment of the financial condition[1] of oil and gas corporations. Of course, methods [4] for analyzing financial stability [5] in relation to the oil and gas industry are proposed. Among other things, mathematical models are being created [6], as well as recommendations are being developed[2] and various ways are being proposed [7] to improve the financial stability of oil and gas companies. In addition, those external and internal factors that affect the financial stability of corporations in the industry [8] are being investigated.

[1] Aliev A.A., Solov'eva M.G., Kachalina A.D. [Integral Estimation of the Company's Financial Condition]. *Finansy i kredit = Finance and Credit*, 2018, vol. 24, iss. 2, pp. 288–303. (In Russ.) URL: https://doi.org/10.24891/fc.24.2.288

[2] Shchurina S.V., Mikhailova M.V. [Company's financial sustainability: Problems and solutions]. *Finansy i kredit = Finance and Credit*, 2016, vol. 22, iss. 42, pp. 43-60. (In Russ.) URL: http://213.226.126.9/fc/2016/fc42/fc4216-43.pdf

In addition, group ratios are important in developing criteria [9] and indicators [10] for assessing financial security. Financial stability is also taken into account when determining the potential [11] and the adequacy of funds [12] for innovative development, as well as predicting the probability of default [13] of corporations in the industry. In addition, various coefficients of financial stability are involved in the analysis of sources of financing and lending to oil and gas companies [14]. Meanwhile, the authors analyze the relationship between sustainability indicators and credit ratings [15], separately focusing on such a ratio as financial leverage [16].

It is worth noting that the topic of financial stability is predictably touched upon when studying the practice of formation [17] and the features [18] of the capital structure of industry corporations [19]. Financial stability indicators are also taken into account in the factor analysis of the development of companies in the industry. Moreover, the authors determine how the imposed sanctions affect the general state of affairs of domestic oil and gas corporations as a whole [20], including financial stability [21], and propose measures necessary for the survival of industry companies in such conditions [22], as well as to improve the efficiency of activities and the social climate [23, 24].

At the same time, the domestic scientific school does not touch upon topics related not only to the determination of the level of financial stability coefficients characteristic at one time or another on the scale of the entire stock market sector of the global oil and gas industry, but also to the establishment of the dynamics of change in indicators and the identification of the main reasons for transformation. Nevertheless, it is necessary to note the complexity of this kind of research, which is caused by the need to perform a comprehensive analysis of a rather impressive array of primary information, consisting of financial statements for a significant list of publicly traded oil and gas companies for a very long period of time. Undoubtedly, only this approach makes it possible to form the most reliable idea of the general situation with financial stability in the stock market sector of the oil and gas industry.

But in this case, the principles in accordance with which the list of leading oil and gas corporations is compiled for the subsequent assessment of the values of financial stability ratios already within the entire stock market sector of the industry are of great importance. Undoubtedly, market capitalization is the most important parameter for publicly traded companies in any industry. Therefore, it is market capitalization that quite naturally is the basic indicator on the basis of which it is advisable to form a list of leading publicly traded oil and gas corporations. Meanwhile, the choice of a source for such information is also important. The best suited as such are the Financial Times Global 500[3] list issued before 2015, as well as the current Forbes Global 2000[4] rating, which publishes data on the market capitalization of the largest corporations in the stock market sector of the world economy. Then those companies that were relatively stable in both of the presented lists of companies throughout the entire studied period of time can be ranked among the leading publicly traded oil and gas corporations.

It was established that 25 companies out of all the variety of publicly traded oil and gas corporations available at that time in the world quite correspond to the specified criteria

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[3] FT Global 500 2015. URL: http://media.ft.com/cms/33558890-98d4-11e0-bd66-00144feab49a.pdf

[4] Forbes Global 2000 2019. URL: http://www.forbes.com/global2000/list

according to the results of the analysis. At the same time, most corporations are located in the United States. These include ExxonMobil, Chevron, ConocoPhillips, Occidental Petroleum, Devon Energy, Anadarko Petroleum, EOG Resources, Apache and Marathon Oil. In turn, Imperial Oil, Suncor Energy, Husky Energy and Canadian Natural Resources refer to another country in North America, which is Canada. In contrast, there is only one company in South America, and that is Petrobras from Brazil. Royal Dutch Shell, BP, TOTAL, Eni and Equinor are located in Western Europe. And China is represented by PetroChina, Sinopec and CNOOC. Of course, there are corporations from Russia in such a variety of companies. PJSC Gazprom, PJSC NK Rosneft and PJSC LUKOIL of them fully comply with the requirements. The totality of all these companies eventually forms the desired list, on the basis of which the indicators of key financial stability multipliers of the world's leading publicly traded oil and gas corporations are evaluated.

Dynamics of changes in the main indicators of financial stability of the leading publicly traded oil and gas companies

Undoubtedly, one of the main indicators in a very large group of financial stability ratios is the ratio of the total debt to the total capital of the corporation, expressed as a percentage. Therefore, it reflects the share that borrowed funds account for in the balance sheet estimate of the total capital of shareholders and creditors of the company. It has been established that this component has grown from about a quarter to almost a third of the total capital for the leading publicly traded oil and gas companies as a whole over the studied period and has confidently overcome even the designated bar in the midst of the industry crisis (*Table 2*). Nevertheless, the general level of the indicator for the stock market sector continues to be rather low, despite the final growth. Therefore, it seems possible to conclude that most of the largest publicly traded corporations in the industry maintain a very comfortable ratio between equity and borrowed capital, and therefore do not experience any particular difficulties in attracting the required debt capital if necessary.

In addition, there is a final decrease in the component of the total debt in the total capital of some industry companies. Such companies include Canadian Natural Resources, TOTAL and Sinopec, which had a relatively high level of values for the industry at the very beginning of the study period. And also such are Gazprom PJSC and LUKOIL PJSC, which had quite comfortable indicators against the background of competitors. However, Apache, Petrobras and Rosneft Oil Company PJSC have a different situation. Thus, the total debt of these companies exceeded the bar of half of the total capital as a result. Moreover, the value of the indicator almost reached two thirds for Anadarko Petroleum, only Devon Energy had such an impressive value, but only at the peak of the industry crisis. It turns out that borrowed funds have come to the fore in the balance sheet assessment of the total capital of some of the leading publicly traded corporations, which was not previously characteristic of the oil and gas industry for many years.

Of course, the most difficult situation among all the corporations in the industry affected by the study is observed in independent US companies, which was facilitated by the crisis that broke out in the industry. It was established during the analysis that two key factors appeared in this case. Thus, a rather tangible increase in the debt burden occurred during

the favorable period of high oil prices, which preceded the protracted sectoral crisis. The situation with share capital was different. Its balance sheet value is interconnected with the final result of the financial activity of the company through that part of it, which is reflected in the form of retained earnings or uncovered loss. But the company's asset revaluation and depreciation of fixed assets had a rather serious negative impact on the profitability of US independent corporations during the industry shock, which in turn led to a decrease in the book value of equity capital.

At the same time, the impact on financial stability of takeovers of their competitors implemented with the involvement of significant borrowed funds for the companies themselves is quite clearly reflected in the high values of the ratio of total debt to total capital of Anadarko Petroleum in 2006 and PJSC NK Rosneft in 2013. And the consequences of the 2014 corruption scandal affected Petrobras, which led to a rapid increase in the indicator.

Another fairly common indicator of the group of financial stability ratios, which is called financial leverage, is essentially an interpretation of the previous multiplier and expresses the ratio of the total debt and equity of the corporation. It is certainly expected that the level of total debt of the leading publicly traded companies in the industry not only reached but exceeded half of the balance sheet value of equity for the entire period, although initially only slightly more than a third of this figure.

It is worth noting that a relatively low financial leverage against the backdrop of industry-typical values, as in the case of Chevron, Imperial Oil and PJSC LUKOIL, may indicate the presence of missed opportunities to increase own profitability by attracting borrowed capital. On the contrary, the strong performance relative to competitors demonstrated by Devon Energy, Anadarko Petroleum, Apache, Petrobras and PJSC NK Rosneft at various times point to possible difficulties in ensuring financial stability. Indeed, such results can lead to difficulties in attracting the necessary borrowed funds for the company and even cause the corporation to lose its financial independence under certain conditions.

The next commonly used indicator of financial stability is the ratio of total debt to EBITDA, which indicates the ability to repay loans and borrowings from earnings that a publicly traded oil and gas company generates before income tax, interest payments and depreciation, depletion and amortization costs. It was revealed that the industry-specific value almost doubled over the period covered by the study, exceeding the comfortable level of 100%.Of course, the likelihood that a large oil and gas corporation will need to immediately repay creditors of debt commensurate in size with EBITDA seems to be rather small. Nevertheless, the total debt exceeded the EBITDA of the leading companies in the industry several times at once during the period of the industry crisis.

It should be noted that this multiplier does not have clear boundaries of the range of possible values, in contrast to the two previous coefficients. A multiple excess of the indicators inherent at that time for the entire stock market sector, which, moreover, is not of a short-term nature, may in this case indicate that there are difficulties in ensuring the financial stability of the oil and gas company. Anadarko Petroleum, Devon Energy, Anadarko Petroleum, Apache, Marathon Oil, Canadian Natural Resources, Petrobras and PJSC NK Rosneft have met such criteria at various times.

The emergence and persistence of high values of the indicator for the industry in the context of high oil prices may be the result of mergers and acquisitions or investments in fixed assets that have not justified themselves. Undoubtedly, an example of this situation is the takeover by ConocoPhillips of its direct competitor in the US oil and gas industry, Burlinghton Recources, completed in 2006. It subsequently resulted in the withdrawal of the entire refining segment from the company's structure into an independent publicly traded corporation Phillips 66.

But closer attention should be paid to the components included in the indicator during long periods of low oil prices. Indeed, the depreciation of the book value of oil and gas assets carried out by the company, in addition to the expected drop in revenue, may then affect the level of EBITDA, which together can lead to a negative value of this component of the coefficient under study. Devon Energy, Anadarko Petroleum, EOG Resources and Marathon Oil saw similar results during the industry crisis.

Complementing the general idea of the financial stability of the leading publicly traded corporations in the oil and gas sector is another important coefficient of the considered group of financial analysis multipliers, which is called the indicator of the ratio of short-term loans and borrowings to the total debt of the company. Therefore, this ratio expresses the share that falls on the short-term component in the structure of borrowings. It has been established that the average level of the indicator for the leading companies in the industry has significantly decreased over the studied period. Thus, about a sixth of the total debt now falls to the short-term component, although initially it exceeded a quarter. It is clear that a high share of short-term debt can adversely affect the financial stability of the company.

Meanwhile, the fact is clearly confirmed in the analysis of this indicator that the assessment of financial stability is complex. Thus, any share of short-term debt will not have a tangible negative impact on the financial stability of the company in the case of an insignificant value of the ratio of total debt to total capital or to EBITDA. Of course, although an impressive level of the indicator is not typical for the industry, such cases were noted by ExxonMobil, Imperial Oil, Royal Dutch Shell, BP, PetroChina, Sinopec, CNOOC and PJSC NK Rosneft in the study period. It is worth noting that the share of total debt in total capital reached a fairly high value for the oil and gas industry in the above list only for PJSC NK Rosneft before the global financial crisis.

Of course, it is necessary to highlight the EBITDA coverage ratio as another important indicator from a very wide list of financial strength multipliers, which characterizes the company's ability to make current interest payments through those earnings that remain before income tax, interest and depreciation, depletion and amortization costs. It is quite obvious that the value of the indicator below one may indicate the presence of difficulties in ensuring financial stability. But a fairly thorough preliminary analysis of EBITDA is also necessary in this case, especially in periods of low oil prices that are unfavorable for the industry.

It should be noted that a quite comfortable level of the indicator is typical for the stock market sector of the oil and gas industry. Nevertheless, it has been determined that the characteristic level of the indicator has seriously decreased over the studied period of

time, the key reason for which was the protracted sectoral crisis. Indeed, Devon Energy, Anadarko Petroleum, Apache and Marathon Oil and Petrobras had the worst performance. The situation was slightly better for Canadian Natural Resources, BP and PJSC NK Rosneft. It is natural that Devon Energy, Anadarko Petroleum, EOG Resources and Marathon Oil had negative values of this indicator in various years of the global financial and industry crises, as well as in the case of the previous coefficient.

The next multiplier among the most common indicators in assessing the financial stability of oil and gas companies is the net debt to equity ratio, which is very similar in structure to the financial leverage indicator. The specificity of the ratio lies in the difference between net and total debt. Indeed, net debt is calculated by adjusting total debt by the amount of unrestricted cash and cash equivalents on the company's balance sheet. Therefore, the indicator as a percentage reflects the ratio of the debt remaining with the company after repayment of part of its obligations through the most liquid assets and the book value of equity capital. Of course, companies in the industry are able to accumulate impressive amounts of cash in their accounts, which can lead to tangible differences in the values between this indicator and the financial leverage ratio.

It was revealed that the characteristic level of the ratio of net debt to equity of shareholders for the stock market sector of the industry has increased significantly over the entire study period, which has already been observed with the indicator of financial leverage. It should be noted that net debt corresponded to about a quarter of the balance sheet estimate of the capital of shareholders of the leading publicly traded oil and gas corporations before the industry crisis. But the amount of net debt exceeded half of the book value of equity already at the height of the industry crisis, although then some decline followed. In addition, there were also negative coefficient values for some companies in the stock market sector of the industry before the industry crisis. These include Chevron, CNOOC, ExxonMobil, Imperial Oil and Occidental Petroleum. Consequently, free cash and cash equivalents in their value exceeded the total total debt of these corporations in certain periods of time. Also, quite good performance was shown by Suncor Energy, Husky Energy and PetroChina, which cannot be said about the performance of such oil and gas companies as Devon Energy, Anadarko Petroleum, Apache, Petrobras and PJSC NK Rosneft.

As a final indicator, it is advisable to consider such a multiplier commonly used in the oil and gas sector as the ratio of net debt to net cash flow from the operating activities of a publicly traded oil and gas corporation. This indicator expresses the ability of the company to pay for its debt obligations, provided that the entire cash flow from operating activities will be directed to the settlement of debt. This situation implies that the oil and gas corporation will not incur capital expenditures. Essentially, the net cash flow from operating activities will form the net cash flow of the company.

It should be noted that it is required to pay attention to another component in the analysis of this indicator in addition to net debt. Indeed, even net cash from operating activities can be negative for an oil and gas corporation under certain conditions. An example for the industry is provided by Anadarko Petroleum data for 2015, when the corporation settled its obligations with Tronox in the amount of USD 5,210 million after a settlement was reached following a lawsuit, which caused the indicator to have a significant negative

value of USD 1,877 million. Undoubtedly, the low value of the coefficient for the stock market sector of the oil and gas industry characterizes a more comfortable position for the company in terms of ensuring financial stability in the absence of non-trivial factors in the formation of net cash from operating activities.

At the same time, it was established based on the results of the analysis that the level of the indicator inherent in the leading publicly traded oil and gas companies increased over the period covered by the study. Moreover, the value exceeded 100% in the midst of the global shock, followed by a decline, but the figure had already surpassed this mark again before the industry crisis and has not declined again despite the gradual improvement of the situation. It turns out that many corporations were unable to repay the total debt if necessary, even if the entire net cash flow from the operations of the publicly traded oil and gas company was directed to pay the debt. These include Devon Energy, Anadarko Petroleum, Apache, Suncor Energy, Canadian Natural Resources, BP, Petrobras, PJSC Gazprom, and PJSC NK Rosneft. On the contrary, the situation has stabilized and the indicator returned to a fairly comfortable level for the industry for Chevron, ConocoPhillips, EOG Resources, Husky Energy, Sinopec, which was characteristic only of PJSC LUKOIL throughout the entire study period.

Conclusions

Undoubtedly, each of the analyzed coefficients separately does not provide an opportunity to form a holistic view of the current situation and emerging trends, but considers only one of the aspects of ensuring financial stability. It becomes obvious in such a case that only a comprehensive analysis of all the main indicators of financial stability in the aggregate makes it possible to draw a conclusion about the ability of a particular publicly traded company in the industry to fulfill its own debt obligations.

Moreover, it is necessary to pay close attention in the framework of the analysis of financial stability to the formation of those components that are part of the indicators. In addition, it is advisable to draw specific conclusions on financial stability based on the results of studying coefficients for at least the medium term and on the basis of comparison with data on the main competitors and the stock market sector of the industry as a whole.

It was revealed that the key indicators of the financial stability of the leading publicly traded oil and gas companies have noticeably deteriorated over the studied period. However, Canadian Natural Resources, TOTAL and Sinopec have been able to improve their financial strength. It has been established that the global crisis did not have a significant impact on the financial stability of the stock market sector of the oil and gas industry as a whole, but certain difficulties arose for ConocoPhillips, Devon Energy and Anadarko Petroleum.

On the contrary, it was determined that a significant drop in the value of financial stability indicators occurred in the key publicly traded corporations of the industry during the industry crisis, when the average annual oil prices dropped to the lowest values for the entire period covered by the study. Nevertheless, the leading oil and gas companies were able to pay their debt obligations even in such conditions, while Anadarko Petroleum,

Apache and Devon Energy faced the greatest difficulties, which experienced an impressive drop in their asset balance sheets. It should be noted that the corruption scandal had an additional serious negative impact on the financial stability of Petrobras, and the impact of the transactions concluded on the takeover of TNK-BP and the acquisition of a controlling stake in PJSC ANK Bashneft manifested itself in the case of PJSC NK Rosneft. Meanwhile, it has been determined that a trend towards improvement in financial stability indicators has emerged in the stock market sector after the end of the sectoral crisis.

Table 1
The average price for WTI and Brent crude oil for 1999–2018, USD per barrel

Oil grade	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
WTI	19.34	30.38	25.98	26.18	31.08	41.51	56.64	66.05	72.34	99.67
Brent	17.90	28.66	24.46	24.99	28.85	38.26	54.57	65.16	72.44	96.94

(Continuation of table)

Oil grade	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
WTI	61.95	79.48	94.88	94.05	97.98	93.17	48.66	43.29	50.80	65.23
Brent	61.74	79.61	111.26	111.63	108.56	98.97	52.32	43.64	54.13	71.34

Source: Authoring, based on the U.S. Energy Information Administration data. URL: https://www.eia.gov

Table 2
The average values of the main financial stability ratios of the twenty five leading publicly traded oil and gas corporations for 2006–2018

Indicator	Dec 31, 2006	Dec 31, 2007	Dec 31, 2008	Dec 31, 2009	Dec 31, 2010	Dec 31, 2011	Dec 31, 2012
Total debt to total equity, %	23.41	22.1	22.93	24.44	24	23.28	24.09
Total debt to equity, %	35.61	32.14	32.62	34.7	33.33	32.41	33.81
Total debt to EBITDA, %	77.26	65.96	112.26	95.66	119.14	125.04	111.59
Short-term loans and credits to total debt, %	27.6	24.43	26.24	20.55	19.04	21.18	19.41
EBITDA coverage	114.22	76.59	139.94	113.97	93.38	70.91	78.66
Net debt to equity, %	26.92	24.82	24.2	26.99	24.29	23.49	24.39
Net debt to net cash flow from operating activities, %	92.84	78.04	71.85	125.34	99.36	95.15	97.51

(Continuation of table)

Indicator	Dec 31, 2013	Dec 31, 2014	Dec 31, 2015	Dec 31, 2016	Dec 31, 2017	Dec 31, 2018
Total debt to total equity, %	26.37	29.14	36.69	35.44	33.7	31.78
Total debt to equity, %	37.99	44.76	73.76	63.59	57.87	54.1
Total debt to EBITDA, %	124.57	211	360.42	294.54	196.3	139.71
Short-term loans and credits to total debt, %	21.35	20.23	18.64	16.95	18.94	16.79
EBITDA coverage	394.62	66.88	17.1	17.89	23.46	25.98
Net debt to equity, %	28.8	34.07	59.87	50.43	44.43	41.42
Net debt to net cash flow from operating activities, %	112.23	115.55	153.57	284.36	209.39	125.41

Source: Authoring, based on [24]

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I, the author of this article, bindingly and explicitly declare of the partial and total lack of actual or potential conflict of interest with any other third party whatsoever, which may arise as a result of the publication of this article. This statement relates to the study, data collection and interpretation, writing and preparation of the article, and the decision to submit the manuscript for publication.