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FINANCIAL AND OPERATING PERFORMANCE OF THE WORLD'S MAJOR PUBLIC OIL AND GAS CORPORATIONS AS AN INDICATOR OF INVESTMENT ATTRACTIVENESS OF DOMESTIC VERTICALLY INTEGRATED OIL AND GAS COMPANIES

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Abstract

Subject. This article considers the financial, stock market, and operational indicators, as well as the ratios of financial and economic analysis obtained on their basis of the twenty five leading listed oil and gas companies within 2006 through 2018.

Objectives. The study aims to determine the current level of values of the financial, stock market, and operational indicators, as well as the ratios of financial and economic analysis of the leading publicly traded oil and gas companies, as well as identify the key trends in the changes within the studied period and factors that have caused these changes.

Methods. For the study, I used comparative, and financial and economic analyses, and generalization of materials of the companies' consolidated financial statements.

Results. The article shows certain changes in the balance sheet values of the companies' assets caused by the growth in the fixed assets value, and the changes in the market attractiveness of the oil and gas sector.

Conclusions. The article concludes that a decrease in the profitability of the industry's stock market segment despite the growth in raw material production affects the market attractiveness of the oil and gas sector negatively.

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Introduction

Representatives of the national scientific school have been paying close attention to various aspects of the financial and economic activities of Russian and foreign oil and gas companies for many years. Such studies are conducted through comparison of competing corporations, as well as at the level of individual countries or even across the entire global oil and gas sector. The stable interest in this topic indicates the importance of this area not only for the scientific community, but also for the entire national economy of the Russian Federation. This is clearly confirmed by the structure of industrial production and

commodity exports, which testify to the clear raw material nature of the country's economy. Therefore, the total proceeds from the sale of oil, natural gas and their products form an impressive part of the State budget revenues.

The largest oil and gas companies are capable of exerting a serious influence on the entire domestic national economy. At the same time, all the key industry corporations in Russia have the status of publicly traded joint-stock companies, whose shares are freely traded on the Moscow Exchange, and depositary receipts for them are traded on major trading floors in the USA and Europe. The main oil and gas companies also occupy top positions in the stock market segment of the Russian economy. The oil and gas sector still continues playing a rather important role in the context of the entire global stock market.

Meanwhile, it is necessary to highlight an important circumstance for the entire oil and gas sector, which lies in the fact that oil quotes are characterized by instability and unpredictability. Therefore, reliable forecasting of oil prices in a relatively narrow confidence interval of possible values seems unlikely even in the medium term. This specificity is confirmed by the dynamics of oil quotations in recent years (*Table 1*). The global oil and gas sector has already experienced manifestations of the global financial crisis and a purely sectoral shock even before the collapse in oil prices, which happened against the backdrop of the breakdown of the agreement to reduce oil production between Russia, Kazakhstan, Azerbaijan and OPEC countries and the growing pandemic.

Not only an analysis of the changes in the results of financial and economic activities of individual companies, but identifying trends typical for the entire stock market segment of the industry as well, are of particular importance in the inherent volatility of hydrocarbon prices inherent in the oil and gas sector. The key parameters for evaluating any publicly traded oil and gas corporation are financial, operational, and stock market indicators. The most important coefficients within the framework of the main groups of financial analysis of publicly traded oil and gas companies are then formed precisely on the basis of these absolute data. Indicators of profitability, turnover, financial stability, liquidity and market valuation of the company, as well as specific financial ratios are among them.

Some absolute indicators are described in domestic scientific works. Thus, attention is paid to assets in the study of their transformation and from the standpoint of improving their management [1, 2]. Liabilities and equity of shareholders, which represent the opposite component of the company's balance, are considered when analyzing the practice of forming the capital structure and identifying directions for improving the efficiency of resource management of industry corporations [3, 4]. Income statement indicators are affected when assessing the current state of the industry and analyzing the tax burden in the oil and gas sector [5, 6]. The components of the cash flow statement find their application in the study of operating, capital and operating costs [7, 8]. Key stock market indicators are studied from the standpoint of the influence of external and internal factors on the market capitalization of companies in the industry, among which one singles out such as global institutions [9, 10]. And the authors refer in their works to operational

indicators when evaluating the performance and studying the resource potential of oil and gas companies [11, 12].

The scientific community is also showing considerable interest in the coefficients of financial analysis of publicly traded oil and gas companies, one of the most important components of which are profitability indicators. The dependence of the values of the coefficients of this group on oil quotations [13] is analyzed in scientific papers, as well as the assessment of the effectiveness of business strategies of industry corporations with their participation [14] is carried out. In addition, turnover ratios are used in the analysis of various strategies, which are also taken into account in factor analysis in assessing the cash flow of oil and gas companies [15, 16].

Such a characteristic as financial stability is of great importance for companies in the industry, and therefore quite significant attention is also paid to the indicators of this group [17]. Various models for assessing the financial stability of oil and gas companies [18] are being explored in this context, which also include similar coefficients. And the liquidity ratios that are used in assessing the creditworthiness of industry corporations [19, 20] are often analyzed in conjunction with indicators of financial stability. The coefficients of market value of a company are used in the analysis of the investment attractiveness of publicly traded oil and gas corporations [21]. The indicators of this group are also used in the evaluation of the value [22]. Such special indicators as the specific financial ratios of corporations in the oil and gas industry are involved in evaluating the effectiveness of activities and forecasting the financial condition [23, 24].

The domestic scientific community does not pay due attention directly to the most comprehensive assessment of the financial and economic activities of the largest publicly traded companies in the industry, despite the variety of groups of absolute indicators, as well as the abundance of coefficients. Consequently, the most important trends in the change in the main indicators are not determined, and the key reasons for the transformations taking place at the level of the leading publicly traded oil and gas corporations are not established. Meanwhile, it is necessary to note the complexity of conducting such studies, which involve the collection and processing of an impressive array of data on a large number of publicly traded corporations in the industry over a long period of time. But it seems possible only with this approach to get the most reliable idea of the situation that is developing in the stock market segment of the global oil and gas industry.

Methodology for compiling a list of the world's leading listed oil and gas corporations

One of the key points in the implementation of such a large-scale study is the selection of companies for the subsequent formation of a list of leading corporations, on the basis of which the values of financial, stock market and operating indicators characteristic of the stock market segment of the oil and gas industry and the coefficients obtained on their

basis are then determined. The most important comparable value for companies in the stock market segment, whose shares are freely listed on the stock exchange, is the market capitalization. It is advisable to use exactly the value of the market valuation of the share capital of industry corporations in this case as the main indicator when ranking to form a list of leading publicly traded companies in the oil and gas sector.

The stock market segment of the economy on a global scale is represented by an impressive set of companies from various industries, among which there are many oil and gas corporations. Therefore, the availability of such sources of information that make it possible to carry out a correct analysis over a long period is of great importance, which will make it possible to form the required list of leading publicly traded oil and gas corporations. Such requirements are met by the Financial Times Global 500[1] published until 2015 and the Forbes Global 2000[2] list, which is still being published. They provide information on the market capitalization of the largest publicly traded corporations of the world. Therefore, it is necessary to include in the list of the leading publicly traded oil and gas companies of the world compiled for further analysis those industry corporations that were present on a relatively constant basis in each of the ratings available at that time.

It was established as a result of a detailed study of all sources published within the analyzed period that 25 oil and gas companies quite meet the specified criteria. The largest number of corporations is based in the USA. Such leadership looks quite natural due to the fact that many more large publicly traded corporations than in any other country are concentrated in the United States. The purely independent companies ConocoPhillips, Occidental Petroleum, Devon Energy, Anadarko Petroleum, EOG Resources, Apache and Marathon Oil, as well as the integrated corporations ExxonMobil and Chevron belong to the US oil and gas sector in the general list. In addition, companies from Canada also got there. These are the integrated corporations Imperial Oil, Suncor Energy, Husky Energy and the independent company Canadian Natural Resources. There is also one company from South America, which is the large integrated corporation Petrobras from Brazil. The list also includes representatives of Western Europe. These are the integrated corporations Royal Dutch Shell, BP, TOTAL, Eni and Equinor. The list also includes companies from China. The country is represented by the independent company CNOOC and the integrated corporations Sinopec and PetroChina. And some domestic oil and gas companies fall under the criteria. They are integrated oil and gas corporations PAO Gazprom, PAO NK Rosneft and PAO LUKOIL. All these companies in total make up a list of the leading publicly traded oil and gas corporations of the world, on the basis of which it is possible to identify the values of financial, operational and stock market indicators inherent in the stock market segment of the industry, as well as the coefficients formed on their basis.

[1] FT Global 500 2015. Market Values and Prices at 31 March 2015.
URL: http://im.ft-static.com/content/images/b38c350e-169d-11e5-b07f-00144feabdc0.xls

[2] Forbes Global 2000 2019. The World's Largest Public Companies. URL: http://www.forbes.com/global2000/list

Dynamics of changes in the main absolute financial, stock market, and operating indicators of the leading publicly traded oil and gas companies

A number of tangible changes took place in the stock market segment of the oil and gas sector during the period under review, which included two quite serious shocks for the industry. It is worth highlighting the overall growth of 72.1% of the book value of assets (*Table 2*), which was also facilitated by major transactions concluded during that period. Such transactions include the merger of Statoil and Norsk Hydro announced on December 18, 2006 and completed on October 1, 2007[3], as well as the merger between Suncor and Petro-Canada signed on March 22, 2009 and completed on August 1 of the same year[4]. In addition, they include a deal concluded on December 14, 2009 and completely closed on June 25 next year[5] by ExxonMobil to acquire a major competitor in the US oil and gas industry, which was the gas corporation XTO Energy.

There was also an impressive increase in the assets of Petrobras, which is directly related to the entry into force on September 3, 2010[6] of an agreement signed with the government of Brazil for the development of a large field. Also significant transactions include the takeover of the Canadian corporation Nexen by CNOOC, which was signed on July 23, 2012 and completed on February 26, 2013[7]. In addition, Royal Dutch Shell acquired the major British gas corporation BG Group on February 15, 2016[8], although the deal itself was announced on April 8, 2015. PAO NK Rosneft was also marked by rather large transactions for the purchase of its competitors in the Russian oil and gas industry, so the takeover of TNK-BP was completed on March 21, 2013[9], and the formalities related to the acquisition of a controlling stake in PAO ANK Bashneft were settled on October 12, 2016[10].

However, the opposite has also been observed in the industry. The entire refining segment, which then became the publicly traded company Marathon Petroleum[11], was completely withdrawn from the structure Marathon Oil, a previously integrated corporation, in 2011.

[3] Annual Report on Form 20-F 2007. Equinor ASA.
URL: https://www.equinor.com/content/dam/statoil/documents/annualreports/2007/statoil-annual-report-20f-2007.pdf

[4] 2009 Annual Report. Suncor Energy Inc.
URL: https://www.suncor.com/en-CA/investor-centre/financial-reports/~/media/files/pdf/suncor_annual_report_2009_en

[5] Annual Report on Form 20-F 2010. Exxon Mobil Corporation.
URL: https://www.sec.gov/Archives/edgar/data/34088/000119312511047394/d10k.htm

[6] Form 20-F Annual Report for the Fiscal Year Ended December 31, 2010. Petróleo Brasileiro S.A.
URL: https://www.sec.gov/Archives/edgar/data/1119639/000129281411001552/pbraform20f2010.htm

[7] Form 20-F Annual Report for the Fiscal Year Ended December 31, 2013. CNOOC Limited.
URL: https://www.sec.gov/Archives/edgar/data/1095595/000095010314002737/dp45516_20f.htm

[8] Annual Report and Form 20-F 2016. Shell plc.
URL: https://reports.shell.com/annual-report/2016/servicepages/downloads/files/download2.php?file=entire_shell_ar16.pdf

[9] Annual Report 2013. PJSC NK Rosneft.
URL: https://www.rosneft.ru/upload/site1/document_file/vusEXkOrF0.pdf

[10] Annual Report 2016. PJSC NK Rosneft.
URL: https://www.rosneft.ru/upload/site1/document_file/a_report_2016.pdf

Marathon Oil then became an independent corporation. A similar split occurred a year later at ConocoPhillips. The refining business was transformed into a publicly traded Phillips 66 corporation, and ConocoPhillips became an independent company[12] and focused on hydrocarbon production. The impact of business splits can be seen very clearly when comparing the dynamics of changes in the book value of the assets of the mentioned companies with the values characteristic of the leading publicly traded corporations and with the indicators of the main competitors, as in mergers, acquisitions or purchases of fields.

However, not only the business split, where in both cases one of the key factors was the impact that Marathon Oil and ConocoPhillips faced after the global financial crisis, but also a prolonged industry shock contributed to the balance sheet valuation of the assets of some corporations fell below the level available at the beginning of the period. And such are the independent companies of the US oil and gas industry Anadarko Petroleum, Apache and Devon Energy. At the same time, the consistent implementation of a strategy to acquire assets with a low cost of oil recovery allowed EOG Resources to increase assets several times over the period studied.

There are also changes in the ratio between the components in the very structure of the assets of the leading publicly traded oil and gas companies. Thus, the component of non-current assets, which had previously prevailed in the balance sheet, increased from 70 to 80% due to an increase in the residual value of fixed assets. Meanwhile, only a few percent accounts for receivables in non-current assets, and the share of the indicator is gradually decreasing. In addition, there is also a reduction in the receivables component in current assets to 37%, where earlier this indicator prevailed and reached 54%. It is the trade component that forms the basis of short-term receivables, but its share has decreased and is now only slightly more than half of the total indicator. In general, short-term receivables significantly exceed the similar long-term component, but the difference between them is gradually decreasing.

It is also noteworthy that in the liabilities and equity of shareholders, which form the opposite part of the balance sheet, the components of liabilities and equity remained almost equal at the level of the leading publicly traded oil and gas companies of the world throughout the entire period covered by the study (*Table 3*). A high share of liabilities is typical for Occidental Petroleum, Anadarko Petroleum, Apache, BP, Equinor, Petrobras and PAO NK Rosneft, while a low share of the indicator is now inherent in Chevron, Imperial Oil, Canadian Natural Resources, PetroChina, CNOOC, PAO Gazprom and PAO LUKOIL after two rather serious crises.

[11] Form 10-K Annual Report for the Fiscal Year Ended December 31, 2011. Marathon Oil Corporation. URL: https://www.marathonoil.com/content/documents/Investors/Annual_Reports_and_Proxy/annual_report_2016.pdf

[12] 2012 Annual Report. ConocoPhillips Company. URL: http://static.conocophillips.com/files/resources/2012_annual_report_cr.pdf

It is important to note that serious transformations have already taken place in the structure of the liabilities themselves, where initially the short-term and long-term components were quite comparable in size. But the dynamics of changes in liabilities was determined by the growth of the long-term component, and therefore it was precisely its component that began to dominate in the overall structure, exceeding the bar of 60%. Only PetroChina, Sinopec and PAO LUKOIL had short-term liabilities larger than the corresponding long-term component among all the corporations affected by the study. Three-quarters of short-term liabilities themselves are accounts payable, about half of which is the trade component. Not more than a quarter of the total balance sheet value usually in this case falls on the remaining component of short-term liabilities, which forms the current part of the total debt. A higher level of this indicator is typical only for PAO NK Rosneft, PAO Gazprom, PetroChina and Devon Energy.

On the contrary, total debt, which surpassed 50%, although exceeding a third by only a few percent at the beginning of the study period, came to the fore in the structure of long-term liabilities after two crises. Only ExxonMobil, Chevron, Imperial Oil, Suncor Energy and Husky Energy have a relatively low share of total debt in long-term liabilities among the companies studied. Meanwhile, the characteristic level of the accounts payable component initially exceeded 40%, but then the indicator fell below the bar of a quarter of total long-term liabilities. The exception is Exxon Mobil, in which accounts payable predominate in long-term liabilities. It is noteworthy that the short-term trade component of accounts payable has surpassed the corresponding component of receivables in the stock market segment of the industry in terms of its value after the global financial crisis.

Approximately two thirds of the total accounts payable account for the short-term component. In addition, about a third of all accounts payable are occupied by the trade component. It is also important that accounts payable ceased to dominate in total liabilities, and total debt began to play a key role, in which the already high share of the long-term component increased and exceeded the level of 80%. At the same time, it is accounts payable that are still the key component of the liabilities of ExxonMobil, Imperial Oil, Sinopec and PAO LUKOIL. Such a transformation contributed to the fact that the total amount of net debt increased by almost three times in the considered companies over the period. Moreover, situations where the available cash and cash equivalents were sufficient to repay the existing total debt ceased to arise for the leading publicly traded oil and gas corporations over time. At the same time, the level of net debt decreased only for ConocoPhillips, Devon Energy, Anadarko Petroleum, Sinopec and PJSC LUKOIL over the entire period studied.

Another component of the balance sheet, which contains data on share capital, grew almost in line with total liabilities. Meanwhile, the final decrease in the balance sheet estimate of equity capital occurred in a number of US industry companies, which was caused by revaluation, depreciation, write-off and sale of part of the existing assets, as well as their withdrawal into independent publicly traded corporations. Such corporations include ConocoPhillips, Marathon Oil, Devon Energy, Anadarko Petroleum and Apache.

It is also noteworthy that a small share of minority shareholders in the share capital is inherent in the leading companies of the stock market segment of the oil and gas industry despite the growth, with the exception of Devon Energy, in which this component is much higher compared to competitors. It is also natural that the share of the total capital, including the equity component and the total debt, also slightly increased and exceeded the bar of two-thirds of the balance sheet value of liabilities and equity as a result.

Tangible changes are also noted in the components of the income statement, where the most important components are revenue and net income of shareholders, and other indicators make it possible to assess how the final financial result was formed (*Table 4*). But it should be noted that a unified approach to presenting data on revenue in the structure of the income statement has not been developed in the stock market segment of the oil and gas industry. For example, US oil and gas companies typically do not include royalty payments in their revenues, while industry corporations in Canada began to resort to this practice only about a decade ago. Moreover, various types of excises, fees and all other taxes that are not related to income tax are also often not indicated in the reporting of a company from Canada. At the same time, domestic oil and gas corporations account for excises and export duties as part of their revenue.

Certain transformations periodically occur in the structure of income statements of the leading publicly traded oil and gas companies. In this context, it is necessary to single out ExxonMobil, which has not shown sales tax expenses in the list of expenses since 2017[13], and therefore the revenue is also completely cleared of such a component. In addition, some companies indicate only that proceeds when presenting revenue, which is formed from the sale of their own products or the resale of purchased goods, and all remaining receipts are already classified as other income. On the contrary, the rest of the corporations in the industry report the total revenue from operating activities and other income, among which it is necessary to highlight such as income from equity participation in subsidiaries and income from the sale of assets, as the initial indicator of the report. The importance of non-core income is usually not very high for the publicly traded corporations in the industry, but such income is quite capable of significantly affecting the overall figure in certain circumstances.

It is necessary to use such an indicator, which can be properly defined for all leading oil and gas corporations without exception, in order to correctly compare companies by revenue. It was established as a result of the analysis of reporting that such a generalized component is net revenue from core activities, which does not include all other receipts, as well as cleared of royalties, excises, export duties and other taxes not related to income tax. The key advantage of this approach is that the specified revenue component does not include the share of total proceeds not intended directly for the corporation itself, and also does not take into account income from non-core activities.

[13] Form 10-K Annual Report Pursuant to Section 13 or 15 (d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2017. Exxon Mobil Corporation.
URL: https://www.sec.gov/Archives/edgar/data/34088/000003408818000015/xom10k2017.htm

It is important to note that legislation in the field of taxation of the oil and gas sector in different countries of the world often has very significant differences. But it is this factor that has a significant impact on what part of the total revenues will remain with the publicly traded oil and gas corporation itself. In addition, some one-time income from non-core activities, such as the sale of a significant share of non-current assets on a scale of the oil and gas company itself, can significantly affect the total indicator. Consequently, the choice of only such a component of revenue, which is related specifically to operating activities and remains at the disposal of the oil and gas company itself, is the most preferable for comparing industry corporations.

The dynamics of the indicator inherent in the leading publicly traded companies of the industry is quite consistent with the change in average annual oil prices, despite the heterogeneous structure of net revenue from core activities. Therefore, it is natural that net revenues fall during periods of crises and the total growth of the indicator by almost a quarter within the framework of the studied period. On the contrary, the total net income of shareholders of the leading publicly traded oil and gas companies decreased by 31%. At the same time, the net income of minority shareholders increased by almost 91%, which was facilitated by the information of such companies as PetroChina, Sinopec and PAO NK Rosneft. In addition, there is a general downward trend in income tax payments, which have declined by more than 47% over the period, although the state taxation systems in countries where the leading publicly traded oil and gas corporations are based have quite significant differences.

Interest expenses in the stock market segment of the industry exceeded the corresponding income even without taking into account the capitalized amounts. Nevertheless, the very significance of net interest expenses in the structure of the income statement at the level of the leading publicly traded corporations in the industry remains low, which is also inherent in the balance of non-interest financial income and expenses, as well as all other income not related to core activities. On the contrary, the resulting doubling of depreciation, depletion and amortization expenses over the period had a significant impact on the net income of shareholders of companies. In addition, the revaluation, impairment and write-offs of assets had a significant impact on the net income of US independent companies during a prolonged industry crisis, and the consequences of one of the largest corruption scandals in the industry were reflected in the indicator of Petrobras. Core business expenses, which were the main reason for the reduction in net income of shareholders against the backdrop of growth in net revenues of industry companies, along with depreciation, depletion and amortization costs, also increased.

It is also natural that certain transformations have taken place in the structure of the cash flow statement of the leading publicly traded corporations in the industry (*Table 5*). Net cash from operating activities in its dynamics is quite consistent with the change in average annual oil prices, as in the case of revenue, and therefore their growth of almost 29% over the period is obvious. Meanwhile, the desire of companies to maintain a positive value of free cash flow has led to the fact that the largest publicly traded oil and

gas corporations were forced to make a very significant reduction in their previously increased capital expenditures with the onset of a protracted industry crisis. But cumulative capital expenditures at the level of the leading publicly traded companies are characterized by a final increase of 22% even after the decline. It is important to note that the main capital expenditures usually fall on the exploration and production segment, even for integrated corporations.

The transformation that is taking place with the market performance of the studied companies of the industry is notable. The global financial crisis had a key impact on the market capitalization of the leading oil and gas corporations, after which the aggregate stock market valuation of the companies did not return to its previous level. Moreover, the protracted industry crisis that followed a few years later contributed to an 18% decline in the industry indicator over the period studied. It is natural that the reaction to changes in oil prices is most pronounced among independent companies, for which cash flow is directly related to commodity prices.

Meanwhile, not only revenue affects the market valuation, but also the net income generated, as evidenced by the growth in capitalization of EOG Resources against the backdrop of falling performance from major competitors in the US oil and gas industry. The country factor is also important, which is confirmed by the dynamics of the market capitalization of domestic companies after the onset of the industry crisis and the introduction of sectoral sanctions against them. And a significant change in the book value of assets affects the market valuation, which is very noticeable in the example of the already mentioned large mergers and acquisitions, as well as in the case of business separation. In addition, a decrease in market valuation also occurs with an increase in the debt burden, and therefore it is advisable to use an enterprise value indicator that takes into account net debt when comparing corporations with different specific levels of debt in total capital. Consequently, the attitude of the market towards the industry itself underwent a radical revision after the global financial crisis, and therefore the return of the capitalization of the oil and gas sector to its previous pre-crisis level seems unlikely even if oil prices recover to the highest levels that existed in the favorable period between the two shocks.

At the same time, an increase in the production of liquid hydrocarbons and natural gas by 18% and 26%, respectively, is characteristic in total for the leading publicly traded oil and gas companies over the covered period of time (*Table 6*), which was facilitated by large mergers and acquisitions. It should be noted that the recovery of liquid hydrocarbons accounts for about 55% of the total production. A similar situation is observed with proved reserves, but the liquid hydrocarbon component in them is higher and reaches almost two thirds of the total estimate. Proved reserves life of liquid hydrocarbons and natural gas decreased against the backdrop of a general deterioration in production and economic conditions in the stock market segment of the industry and not so high rates of replenishment of recoverable resources, but remained in a fairly comfortable range of values from 10 to 15 years for most leading companies.

In general, the leading positions in terms of operational indicators in the stock market segment of the global oil and gas industry are occupied by integrated corporations. The largest domestic corporations, which have only strengthened their position over the period under review, are in the leading roles in mining, proved reserves and proved reserves life among them. Moreover, Canadian corporations included in the study also improved their own performance, while operating performance declined for many independent US companies. The situation with proved reserves life is also not the best for leading corporations from China.

Dynamics of changes in indicators within the main groups of financial analysis ratios of the leading publicly traded oil and gas companies

It is quite natural that the transformation of balance sheet and income statement indicators noted in the stock market segment led to a significant final decrease in profitability indicators for most of the leading publicly traded oil and gas companies of the world over the period (*Table 7*). It is also logical that the deepest recession is characteristic of independent companies in the industry. At the same time, domestic integrated corporations are ahead of many competitors in terms of profitability. The ratio analysis also confirms that the key reason for the reduction in profitability was a rather tangible increase in core production expenses, among which the increase in depreciation, depletion and amortization costs stands out. Then the general decline in the profitability of disposable reserves is obvious, which mainly form the property and equipment and the non-current assets of oil and gas corporations. Therefore, companies sought to reduce the share of current assets in order to increase profitability. Moreover, impairment, revaluation and write-off of assets significantly affected the level of profitability typical for the stock market segment of the industry during the protracted industry crisis.

The dynamics of changes in turnover indicators expresses the desire of the leading publicly traded oil and gas corporations to minimize their cash operating cycle, the duration of which decreased by 14% in the stock market segment of the industry over the period. The reason for this transformation was the increase in the accounts payable component and the decrease in the accounts receivable constituent element with a relatively stable inventory turnover. Many of the companies studied have sufficient potential to further reduce the duration of the cash operating cycle. At the same time, a 34% increase in the asset turnover of the leading publicly traded oil and gas corporations indicates that the funds of companies in the stock market segment of the industry now need much more time to return back as net revenue. It is also important to note that companies with a more rational use of their own resources look much more attractive than their competitors in the oil and gas industry.

At the same time, a comprehensive analysis of financial stability indicators revealed that the share of total debt increased by 36% in the structure of the total capital of the leading publicly traded companies in the industry (*Table 8*). Moreover, total debt significantly outperformed EBITDA for many corporations, although it was significantly below it at

the beginning of the period. It should be noted that the global financial turmoil had a noticeable impact only on the financial stability of ConocoPhillips, Devon Energy and Anadarko Petroleum. On the contrary, the protracted industry crisis was a serious test for the stock market segment of the oil and gas industry, but even then most of the leading publicly traded companies were able to maintain their financial stability at the proper level, with the exception of Anadarko Petroleum, Apache and Devon Energy. In addition, transactions with TNK-BP and PAO ANK Bashneft seriously weakened the financial stability of PAO NK Rosneft, and the consequences of the corruption scandal negatively affected the performance of Petrobras. At the same time, the studied corporations are characterized by a low share of the short-term component in total debt and small interest payments against the backdrop of EBITDA. It is also important that the situation in the industry began to improve after the industry crisis.

It is noteworthy that both crises did not lead to serious liquidity problems for the leading publicly traded oil and gas corporations. Moreover, the improvement in current liquidity, which is mainly due to the increase in unrestricted cash and cash equivalents, is noted in the stock market segment for the entire period. And therefore, the final growth of instant liquidity turned out to be higher than that of other indicators of this group. The weakest dynamics was noted in quick liquidity, which expresses the desire of corporations to decrease the component of short-term receivables in order to reduce the cash operating cycle. In addition, the level of the financial dependence ratio inherent in the stock market segment of the industry remains in a comfortable range of values, which is quite consistent with the information received on financial stability.

On the contrary, a decrease in values is inherent in most of the market valuation ratios of the company (*Table 9*), which is caused by a drop in market capitalization. This is understandable as the reaction of exchanges to the shrinking profitability in the industry, but the growth of some of the main absolute financial indicators, such as assets, equity and net revenue, had an additional impact. It is also worth noting that domestic oil and gas corporations look undervalued compared to their competitors.

Indicators based on balance sheet assets and equity are best suited for comparing and evaluating the possible value of oil and gas companies among the ratios studied. The use of coefficients based on net revenue is also acceptable, but with a large number of restrictions that must be taken into account when comparing. It is preferable to use the other considered coefficients as auxiliary indicators. It is also advisable to use the enterprise value indicator instead of market capitalization at different levels of debt.

Growth is typical only for the ratio of net revenue to production among all the specific financial indicators of the leading publicly traded oil and gas companies of the world (*Table 10*), but only by 5% over the period, which was caused by an increase in the cost of raw hydrocarbons and refined products. Quite an impressive drop is inherent in other specific coefficients. Publicly traded oil and gas companies are forced to reduce capital expenditures in the exploration and production sector per barrel of production in the face

of a decrease in specific profitability indicators in the stock market segment of the industry, which is also reflected in the corresponding market valuation. At the same time, specific market indicators confirm the low assessment of the entire domestic oil and gas industry by investors. Moreover, the market indicators of this group are quite applicable for assessing the possible value of companies in the industry.

Conclusions

The comprehensive analysis carried out makes it possible to draw a number of conclusions on the dynamics of changes in the results of financial and economic activities of the leading publicly traded oil and gas corporations and on the factors that contributed to the transformation that took place in the stock market segment of the industry. Thus, a significant final increase in the overall balance sheet valuation of the assets of the studied oil and gas companies was revealed. It has been established that this increase occurred mainly due to an increase in the residual value of fixed assets, which led to an increase in the share of non-current assets that already dominated the structure of the balance sheet. It was determined that the ratio between liabilities and equity at the level of the largest publicly traded oil and gas corporations remained approximately equal throughout the entire studied period. At the same time, the dynamics of liabilities was determined by the long-term component, which began to prevail in their structure due to the growth in the total debt of the companies studied.

There is a noticeable final increase in the total net revenue from the core activities of the considered companies, although a rather tangible decrease in the indicator occurred during the periods of the global financial crisis and a purely sectoral shock. Meanwhile, a significant drop in the net income of shareholders of the leading publicly traded corporations in the industry has been established, the main reason for which was an increase in expenses for core activities, among which it is necessary to single out the costs of depreciation, depletion and amortization. Moreover, the revaluation, impairment and write-off of assets had a significant impact on the income of independent US companies during the industry crisis, and the consequences of one of the most significant corruption scandals in the industry affected the indicator of Petrobras. The final growth of capital investments was also determined, among which the costs in the exploration and production segment prevail even among integrated corporations.

A decrease in the market attractiveness of the oil and gas sector has been identified. The revaluation itself took place during the global financial crisis and led to a significant drop, after which the total market capitalization of the stock market segment of the industry did not return to its previous level. In addition, it was found that the industry crisis, which followed a few years later, only contributed to a further decline in the market capitalization of the industry. At the same time, the indicators of production of liquid hydrocarbons and natural gas in their totality at the leading publicly traded oil and gas companies of the world increased. On the contrary, the proved reserves life of liquid

hydrocarbons and natural gas decreased, but remained in a rather comfortable range of values from 10 to 15 years for most of the corporations considered.

The change in absolute indicators led to a decrease in profitability in the stock market segment of the oil and gas industry. Corporations sought to minimize their own cash operating cycle, as evidenced by the increase in the creditor component and the decrease in the accounts receivable constituent element, which occurred with a relatively stable inventory turnover. It was also revealed that the share of total debt increased in the structure of the total capital of the leading publicly traded oil and gas companies, and the most serious test was the protracted industry crisis, but even then most corporations were able to ensure their own financial stability.

It is also necessary to note the improvement in liquidity indicators of the stock market segment of the oil and gas industry. The greatest growth is inherent in the instant liquidity of companies. On the contrary, the most insignificant increase is noted in quick liquidity, which is an indirect confirmation of the already mentioned desire to reduce the cash operating cycle. It has also been established that most of the market valuation coefficients of the company are characterized by a decrease, mainly caused by a drop in market capitalization, which is a completely predictable reaction of investors to the overall reduction in profitability in the stock market segment of the industry. A decrease in the values of most specific indicators was also revealed.

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	17.9	28.66	24.46	24.99	28.85	38.26	54.57	65.16	72.44	96.94

Continuation of the 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	50.8	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://eia.gov

Table 2

The average values of the key components of the assets of the twenty five leading publicly traded oil and gas corporations for 2006–2018, million USD

Indicator	2006	2007	2008	2009	2010	2011	2012
Non-current assets	61 299	74 534	76 668	88 529	100 340	110 061	118 357
Current assets	24 260	29 041	26 711	27 190	33 681	36 976	38 531
Inventories	5 340	6 892	5 695	7 240	8 028	9 187	9 661
Cash and cash equivalents	4 062	4 458	5 020	4 703	6 299	6 590	7 497
Short-term financial investments	714	1 337	1 049	454	1 637	1 527	1 533
Short-term receivables	12 986	15 872	13 977	13 831	15 888	18 121	17 838
Most liquid assets	17 656	21 044	19 689	18 986	23 722	26 223	26 772
Short-term trade receivables	8 506	10 688	7 939	8 701	10 365	11 824	11 334
Long-term receivables	1 525	2 251	2 407	3 061	3 622	3 972	4 292
Long-term trade receivables	418	607	362	465	458	494	577
Receivables	14 512	18 123	16 384	16 892	19 510	22 093	22 130
Trade receivables	8 923	11 295	8 301	9 166	10 823	12 318	11 912

Continuation of the table

Indicator	2013	2014	2015	2016	2017	2018
Non-current assets	130 871	124 087	110 501	116 701	120 021	116 017
Current assets	38 358	34 582	29 251	28 411	32 253	31 579
Inventories	10 136	7 724	6 034	6 739	7 539	7 304
Cash and cash equivalents	7 280	7 898	8 049	7 747	8 353	8 184
Short-term financial investments	1 847	2 153	2 179	1 785	3 168	3 360
Short-term receivables	17 967	15 255	11 163	10 993	12 599	11 662
Most liquid assets	26 899	25 231	21 359	20 502	23 668	22 881
Short-term trade receivables	11 598	8 834	6 040	6 577	8 088	7 592
Long-term receivables	4 334	4 217	4 145	4 561	5 054	4 855
Long-term trade receivables	517	485	385	437	464	406
Receivables	22 301	19 472	15 308	15 555	17 653	16 517
Trade receivables	12 116	9 319	6 425	7 015	8 552	7 998

Source: Authoring, based on [25]

Table 3

The average values of the key components of the liabilities and the equity of the twenty five leading publicly traded oil and gas corporations for 2006–2018, million USD

Indicator	2006	2007	2008	2009	2010	2011	2012
Short-term liabilities	20 738	24 961	24 194	23 896	27 860	31 508	31 167
Long-term liabilities	22 047	26 675	26 616	33 196	36 947	39 524	43 436
Short-term accounts payable	16 139	19 798	18 057	18 749	22 425	26 430	25 037
Short-term trade accounts payable	7 728	9 901	7 713	8 827	10 838	12 531	12 609
Long -term accounts payable	9 414	10 573	9 846	10 952	12 052	12 416	13 008
Accounts payable	25 552	30 372	27 904	29 702	34 476	38 845	38 045
Short-term component of total debt	3 705	4 189	4 845	4 242	4 151	4 850	5 008
Long-term component of total debt	7 964	9 928	10 372	15 241	16 901	17 623	19 836
Total debt	11 668	14 116	15 218	19 483	21 051	22 473	24 844
Net debt	7 606	9 659	10 198	14 780	14 752	15 883	17 347
Equity	42 997	52 377	53 009	59 311	70 013	76 883	83 209
Shareholders' equity	41 560	50 732	51 411	57 649	68 130	74 891	80 972
Total capital	53 254	64 855	66 631	77 138	89 181	97 364	105 816
Minority share in equity	1 437	1 645	1 598	1 663	1 883	1 992	2 236

Continuation of the table

Indicator	2013	2014	2015	2016	2017	2018
Short-term liabilities	33 364	30 531	24 255	24 813	29 000	27 280
Long-term liabilities	48 467	49 932	48 357	49 958	47 733	45 590
Short-term accounts payable	25 514	22 435	17 010	17 855	20 994	20 581
Short-term trade accounts payable	12 886	10 830	7 625	8 548	10 118	9 347
Long -term accounts payable	14 452	13 736	11 241	12 261	11 501	10 994
Accounts payable	39 966	36 172	28 251	30 117	32 494	31 576
Short-term component of total debt	6 804	6 720	5 838	6 004	7 021	5 133
Long-term component of total debt	23 569	25 391	26 403	27 392	25 786	24 417
Total debt	30 372	32 111	32 241	33 396	32 808	29 549
Net debt	23 092	24 214	24 192	25 649	24 454	21 365
Equity	87 398	78 207	67 141	70 340	75 541	74 726
Shareholders' equity	84 812	75 635	64 283	67 108	71 863	71 242
Total capital	115 184	107 746	96 524	100 504	104 671	100 791
Minority share in equity	2 585	2 572	2 858	3 232	3 677	3 485

Source: Authoring, based on [25]

Table 4

The average values of the key components of the income statements of the twenty five leading publicly traded oil and gas corporations for 2006–2018, million USD

Indicator	2006	2007	2008	2009	2010	2011	2012
Net revenue from core activities	86 683	98 037	121 111	85 565	110 202	137 449	136 233
Net income of shareholders	10 463	11 713	10 015	7 099	9 658	13 284	11 472
Minority share in net income	215	277	309	104	291	284	348
Income taxes	6 999	7 452	8 284	4 465	5 786	8 204	7 602
EBT	17 610	19 475	18 449	11 716	15 740	21 931	19 510
Interest expense	516	677	575	549	536	571	660
Interest income	234	329	263	175	159	172	189
Net interest expense	282	348	311	374	377	400	471
EBIT	17 893	19 824	18 761	12 087	16 118	22 332	19 982
Depreciation, depletion and amortization	4 204	5 182	5 879	6 409	7 082	7 366	8 541
EBITDA	22 179	25 142	24 794	18 669	23 329	29 807	28 697
Impairment, revaluation and write-off of assets	62	295	159	145	167	321	509
Adjusted EBITDA	22 240	25 438	24 952	18 814	23 495	30 128	29 206
Income from core activities	15 716	16 601	18 735	10 682	13 302	19 244	15 939

Continuation of the table

Indicator	2013	2014	2015	2016	2017	2018
Net revenue from core activities	135 783	125 962	81 147	71 854	91 004	108 002
Net income of shareholders	10 528	5 534	-1 394	1 049	4 268	7 205
Minority share in net income	200	137	63	299	348	410
Income taxes	5 941	4 221	-28	414	1 405	3 691
EBT	17 144	10 035	-1 328	1 778	6 029	11 752
Interest expense	735	820	937	1 170	1 181	1 152
Interest income	164	167	191	221	275	276
Net interest expense	571	653	746	950	905	876
EBIT	17 716	10 688	-582	2 728	6 935	12 628
Depreciation, depletion and amortization	9 650	10 461	11 568	9 863	10 233	9 391
EBITDA	27 543	21 248	11 037	12 607	17 168	22 019
Impairment, revaluation and write-off of assets	353	1 698	2 492	584	497	261
Adjusted EBITDA	27 896	22 946	13 529	13 192	17 665	22 280
Income from core activities	14 809	8 952	-1 505	1 442	5 365	11 111

Source: Authoring, based on [25]

Table 5

The average values of the key components of the consolidated cash flow statements and stock market indicators of the twenty five leading publicly traded oil and gas corporations for 2006–2018, million USD

Indicator	2006	2007	2008	2009	2010	2011	2012
Net cash from operating activities	13 897	16 070	18 510	13 456	17 575	20 367	19 954
Capital expenditures	9 950	11 433	14 868	13 240	15 224	18 045	19 567
Exploration and production capital expenditures	7 113	7 886	10 469	8 871	10 748	12 901	14 425
Free cash flow	3 947	4 637	3 642	216	2 351	2 322	387
Dividends	2 580	3 000	3 123	3 219	2 856	3 111	3 401
Market capitalization	99 491	156 844	82 166	105 501	107 054	101 949	99 083
Enterprise value	107 096	166 501	92 364	120 280	121 805	117 827	116 425

Continuation of the table

Indicator	2013	2014	2015	2016	2017	2018
Net cash from operating activities	20 647	20 814	14 402	11 312	14 661	17 914
Capital expenditures	22 280	18 654	13 571	10 529	11 444	12 165
Exploration and production capital expenditures	17 157	15 045	10 888	8 118	8 678	8 799
Free cash flow	–1 634	2 160	831	783	3 217	5 749
Dividends	3 422	3 650	2 924	2 497	2 872	3 631
Market capitalization	102 665	91 019	69 446	87 586	91 919	82 062
Enterprise value	125 756	115 232	93 636	113 234	116 364	103 421

Source: Authoring, based on [25]

Table 6

The average values of the key indicators for production and reserves of the twenty five leading publicly traded oil and gas corporations for 2006–2018

Indicator	2006	2007	2008	2009	2010	2011	2012
Production of liquid hydrocarbons, thousand BOE per day	1 049	1 058	1 046	1 074	1 098	1 055	1 064
Natural gas production, thousand BOE per day	779	805	855	811	883	889	883
Total hydrocarbon production, thousand BOE per day	1 828	1 863	1 902	1 885	1 981	1 944	1 947
Proved reserves of liquid hydrocarbons, million BOE	5 135	5 139	5 090	5 302	5 297	5 406	5 462
Proved reserves of natural gas, million BOE	7 123	7 215	7 247	7 376	7 533	7 722	7 710
Total proved reserves of hydrocarbons, million BOE	12 258	12 354	12 337	12 678	12 830	13 129	13 172
Proved reserves life of liquid hydrocarbons, years	13.38	13.37	13.65	14.45	13.95	15.1	14.9
Proved reserves life of natural gas, years	16.88	16.58	16.03	15.85	14.68	13.85	15.19
Proved reserves life of hydrocarbons, years	14.47	14.27	14.37	15.01	14.37	15.31	15.24

Continuation of the table

Indicator	2013	2014	2015	2016	2017	2018
Production of liquid hydrocarbons, thousand BOE per day	1 144	1 147	1 210	1 208	1 223	1 242
Natural gas production, thousand BOE per day	898	870	850	894	949	981
Total hydrocarbon production, thousand BOE per day	2 042	2 018	2 060	2 102	2 172	2 223
Proved reserves of liquid hydrocarbons, million BOE	6 089	6 085	5 817	5 550	5 742	6 123
Proved reserves of natural gas, million BOE	7 786	7 759	7 620	8 044	7 969	7 868
Total proved reserves of hydrocarbons, million BOE	13 875	13 844	13 436	13 593	13 710	13 991
Proved reserves life of liquid hydrocarbons, years	15.15	15	13.15	11.87	12.23	12.95
Proved reserves life of natural gas, years	14.48	14.55	14.36	13.58	13.84	13.09
Proved reserves life of hydrocarbons, years	15.5	15.63	14.08	12.96	13.08	13.5

Source: Authoring, based on [25]

Table 7

The average values of the key profitability and turnover ratios of the twenty five leading publicly traded oil and gas corporations for 2006–2018

Indicator	2006	2007	2008	2009	2010	2011	2012
Income from core activities to net revenue, %	28.57	25.86	24.81	16.03	18.95	21.68	16.9
EBT to net revenue, %	29.42	30.01	22.63	13.61	21.37	23.06	19.53
EBIT to net revenue, %	30.26	31.15	23.21	14.82	22.44	23.88	20.46
EBITDA to net revenue, %	39.22	41.7	34.26	30.73	35.2	35.35	34.62
Shareholder net income to net revenue, %	20.03	19.83	14.31	8.66	13.93	14.51	11.46
Return on assets, %	13.82	12.7	10.58	5.36	7.85	9.2	6.96
Return on non-current assets, %	18.73	17.05	14.17	7.1	10.13	12.17	9.15
Return on equity, %	28.88	25.92	20.67	10.32	14.82	17.57	13.35
Return on average capital employed, %	22.71	20.73	17.2	8.6	12.07	14.36	10.99
Asset turnover, days	556.87	607.48	515.49	803.55	679.1	640.99	715.79
Accounts receivable turnover, days	41.55	43.81	33.01	44.52	40.65	41.35	43.79
Inventory turnover, days	17.94	19.28	16.55	25.2	22.37	21.62	22.04
Accounts payable turnover, days	33.68	37.27	29.81	42.77	37.14	39.58	42.12
Cash operating cycle, days	25.81	25.81	19.75	26.97	25.89	23.39	23.73

Continuation of the table

Indicator	2013	2014	2015	2016	2017	2018
Income from core activities to net revenue, %	17.61	10.77	–37.14	–5.69	6.24	16.35
EBT to net revenue, %	18.13	11.95	–38.51	–5.97	2.56	17.06
EBIT to net revenue, %	19.12	13	–36.52	–2.94	4.85	18.85
EBITDA to net revenue, %	33.68	29.88	6.24	22.55	24.66	34.29
Shareholder net income to net revenue, %	10.97	5.77	–29.83	–5.81	1.69	11.27
Return on assets, %	6.09	3.63	–5.95	–0.71	2.26	5.64
Return on non-current assets, %	7.76	4.45	–6.96	–0.73	2.9	7.07
Return on equity, %	11.92	7.06	–15.43	–4.01	5.16	11.9
Return on average capital employed, %	9.38	3.4	–8.03	1.24	4.61	8.9
Asset turnover, days	719.85	754.63	1 081.27	1 152.9	924.21	747.14
Accounts receivable turnover, days	42.27	41.8	50.34	50.52	46.54	39.61
Inventory turnover, days	22.04	21.81	27.67	29.75	25.48	21.88
Accounts payable turnover, days	40.87	42.78	55.65	53.15	46.01	39.32
Cash operating cycle, days	23.46	20.84	22.4	27.17	26.15	22.19

Source: Authoring, based on [25]

Table 8

The average values of the key financial stability and liquidity ratios of the twenty five leading publicly traded oil and gas corporations for 2006–2018, percentage

Indicator	2006	2007	2008	2009	2010	2011	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
Instant liquidity	22.51	20.44	25.74	27.16	28.07	28.38	31.86
Quick liquidity	91.07	87.69	90.07	92.06	95.91	97.45	101.34
Current liquidity	116.79	114.12	119.31	124.33	130.19	128.79	133.07
Financial dependence	213.45	209.21	203.49	202.23	201.94	201.45	199.9

Continuation of the table

Indicator	2013	2014	2015	2016	2017	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
Instant liquidity	30.07	32.43	37.27	42.16	38.58	39.01
Quick liquidity	91.93	92.6	98.83	101.55	102.17	102.18
Current liquidity	120.93	124.36	129.93	132.08	129.69	131.92
Financial dependence	203.48	214.18	253.55	238.8	229.65	224.23

Source: Authoring, based on [25]

Table 9

The average values of the key market valuations ratios of the twenty five leading publicly traded oil and gas corporations for 2006–2018

Indicator	2006	2007	2008	2009	2010	2011	2012
Enterprise value to EBITDA ratio	5.87	7.3	5.87	6.29	6.58	5.71	4.82
Enterprise value to DACF ratio	8.48	9.74	4.84	9.67	7.47	5.94	5.74
Common stock price-to-earnings ratio	10.97	13.97	7.22	2.14	16.93	7.91	8.01
Market capitalization-to-assets ratio	1.38	1.62	0.84	1.01	0.91	0.76	0.7
Market capitalization-to-shareholders' equity ratio	2.78	3.17	1.64	1.97	1.76	1.5	1.37
Market capitalization-to-net sales ratio	2.09	2.67	1.14	2.35	1.89	1.39	1.37

Continuation of the table

Indicator	2013	2014	2015	2016	2017	2018
Enterprise value to EBITDA ratio	5.15	6.1	8.05	10.94	7.21	4.75
Enterprise value to DACF ratio	6.2	5.14	5.97	12.51	8.49	5.54
Common stock price-to-earnings ratio	–37.52	16.35	4.99	53.85	–14.38	21.75
Market capitalization-to-assets ratio	0.69	0.62	0.56	0.72	0.71	0.61
Market capitalization-to-shareholders' equity ratio	1.39	1.28	1.42	1.72	1.57	1.32
Market capitalization-to-net sales ratio	1.41	1.26	1.51	2.38	1.82	1.23

Source: Authoring, based on [25]

Table 10

The average values of the key specific financial and stock market ratios of the twenty five leading publicly traded oil and gas corporations in 2006–2018, USD per barrel of oil equivalent

Indicator	2006	2007	2008	2009	2010	2011	2012
Net revenue per barrel of production	134	153.42	186.01	132.52	166.56	199.73	193.62
Income from core activity per barrel of production	26.05	28.18	30.27	15.8	20.5	29.06	24.03
EBITDA per barrel of production	37.56	42.2	41.58	29.16	36.83	46.38	44.06
Net income of shareholders per barrel of production	18.11	19.73	16.87	9.6	14.33	19.36	15.93
Capital expenditures in the exploration and production sector per barrel of production	16.65	17.39	22.06	16.44	20.3	24.24	26.96
Market capitalization per barrel of production	186.18	276.49	145.85	194.4	186.84	176.02	169.94
Market capitalization per barrel of proved reserves	15.08	21.87	11.55	14.62	14.79	13.15	13.07

Continuation of the table

Indicator	2013	2014	2015	2016	2017	2018
Net revenue per barrel of production	191.65	179.93	108.36	95.6	121.65	141.2
Income from core activity per barrel of production	21.86	13.43	–13.55	–0.64	6.88	14.76
EBITDA per barrel of production	41.79	35.54	10.7	16.85	23.2	31.22
Net income of shareholders per barrel of production	14.39	8.73	–10.99	–0.44	4.57	10.28
Capital expenditures in the exploration and production sector per barrel of production	31.08	27.96	16.92	11	13.16	13.34
Market capitalization per barrel of production	175.23	157.51	109.46	140.81	145.11	118.65
Market capitalization per barrel of proved reserves	13.07	11.78	9.57	13.62	13.49	10.94

Source: Authoring, based on [25]

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Conflict-of-interest notification

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.