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Modeling and Mediation in the Interaction Between Oil Prices and the Development of the Economy Sectors: Evidence of Kazakhstan

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ABSTRACT

The study of the interaction between oil prices and the development of sectors of the economy of the Republic of Kazakhstan is of high relevance in the context of the country's sustainable development, the diversity of the economy and reducing the risks associated with dependence on the oil and gas sector. This helps to make informed decisions and formulate strategies that promote sustainable and balanced economic growth. The study of modeling and mediation in the interaction between oil prices and the development of sectors of the economy of Kazakhstan is of practical importance and can serve as a basis for developing effective strategies for sustainable economic development of the country in the conditions of oil market volatility The aim of the study is to model and mediate the interaction between oil prices and the development of sectors of the economy of Kazakhstan, aimed at developing mathematical or statistical models that will help predict the impact of changes in oil prices on various sectors of the economy of Kazakhstan, as well as analyze how the development of individual sectors can affect on oil prices.

INTRODUCTION

The interaction between oil prices and economic sector development can be represented through modeling and mediation. This concept assumes that changes in oil prices can affect various sectors of the economy, and at the same time, the development of certain sectors can affect oil prices. This mutually

interrelated process can be analyzed using mediation models and methods. Modeling allows you to create abstract ideas about the dynamics of oil prices and their impact on various sectors of the economy. Such models take into account factors that can influence changes in oil prices, such as supply and demand in world markets, geopolitical events, innovations in production and production, etc. Similarly, models can take into account factors that influence the development of sectors of the economy, such as investment, technological progress, regulation, etc.

Mediation involves identifying links and dependencies between oil prices and the development of sectors of the economy. With the help of such an analysis, it is possible to determine which sectors of the economy are most sensitive to changes in oil prices, and vice versa, what impact the development of individual sectors has on oil prices (Mota et al. 2023; Hassan et al. 2019). This can help develop strategies for the sustainable development of the economy in the face of oil price volatility. The use of models and intermediation in researching the interaction between oil prices and economic sector development helps to make more informed economic development decisions, as well as to develop policies and strategies to improve the resilience of the economy in the face of oil market volatility.

The oil and gas industry in Kazakhstan is traditionally considered the leading activity that determines the main trends in the development and growth of the economy in the country and has one of the greatest impacts on the well-being of Kazakhstanis. This state of affairs is explained by the presence in Kazakhstan of large reserves of oil and gas, the high level of production of these types of raw materials in the country and the corresponding volumes of exports. In the oil and gas industry of the Republic of Kazakhstan, modeling and mediation play an important role in streamlining processes and making informed decisions. In this context, modeling means the creation of mathematical or statistical models that help analyze various aspects of the oil and gas industry and predict its behavior in various scenarios.

The study of modeling and mediation in the interaction between oil prices and the development of sectors of the economy of Kazakhstan is of practical importance and can serve as a basis for developing effective strategies for sustainable economic development of the country in the conditions of oil market volatility.

1. LITERATURE REVIEW

The oil and gas industry plays an important role in the economy of Kazakhstan and is one of the main drivers of the country's GDP growth, reflecting the significant dependence of the economy on industry revenues (Rundzya & Grebenik, 2017). Many Kazakh scientists have conducted research in the field of forecasting sustainable development, dealing with the factors of sustainable economic growth. The works analyzed by these scientists dealt with the issues of ensuring sustainable development at the company level. However, this study examines the issues of sustainable development of the company and approaches to their solution using modeling and mediation in the relationship between oil prices and the development of sectors of the economy, as well as financial tools for monitoring and evaluating the activities of industrial enterprises. It is noted that asset management is closely related to managing the life cycle of assets in order to achieve the business goals of an organization that may own or manage assets.

It seems that one of the effective ways to manage a company's assets is to implement an effective asset management system based on the use of financial instruments (Iluore et al., 2020). In the industrial sector, physical assets are given priority over financial or current ones, based on the understanding that it is the results of working with these physical assets that bring financial returns (Rahimi et al., 2017). Competitive advantage is achieved by eliminating problems with asset management, ensuring the efficiency of their use (Roe et al., 2016), efficient operation and a good corporate culture (Mamudu et al., 2019).M any scientists pay special attention to the analysis of information sources for assessing innovative potential, where they analyze the existing forms of statistical reporting and offer indicators that need to be obtained, where decision-making methods are taken as the basis, providing informational, psychological, social and economic security of the process of introducing information technologies (Bogatenkov et al., 2018). N. Tchoffo (2022) presents a study focused on a recursive dynamic Computable General Equilibrium (CGE) model, examining both static and dynamic convergence. The author introduces a simplified approach and demonstrates its application using the GAMS (General Algebraic Modeling System) software. The research

likely contributes to the field of economic modeling and analysis, particularly in terms of convergence dynamics and their implications within a CGE framework.

Effective financial risk management necessary to minimize the impact of financial risks on the final result is possible only with a sufficiently accurate risk assessment (Kryzhanovsky, 2016). In the current business environment and high competition in the industry markets, a positive business reputation and image of the company are of great importance. They are characterized by a number of indicators, the analysis and evaluation of which will allow companies to respond in a timely manner to the risks and threats of a decrease in business reputation and investment attractiveness, and thereby ensure economic security (Korostelkina & Dedkova, 2020). The asymmetric impact of oil price volatility on economic development, especially at the industry level, has been the focus of some recent studies (Rodriguez-Benavides et al., 2022), but not the primary sectors of the economy. A similar conclusion was made in the countries of the Middle East and North Africa (Abdelsalam, 2020), M. Ahmed (2016) after examining the supposed impact of oil prices on MENA countries confirmed the proposed expectations. The results of his study confirmed the assumption about the negative impact of oil prices on economic growth. In the Middle East region such as Jordan (Nsour & Malkawi, 2019; Tahtamouni et al., 2017; Bibi et al., 2021) and Lebanon (Ghalayini, 2011) the negative impact of oil prices on GDP was confirmed. The authors in their studies found that as long as the cost of importing oil is reduced, then GDP is growing.

The countries of the Persian Gulf and the Middle East were also the subject of a study (Ghalayini, 2011), which also showed results similar to those of the MENA countries. In India, after conducting a study for the same reason, A. Sarmah and D. Bal (2021) argue that the Indian economy has responded significantly negatively to any changes in the price of oil, and therefore the Indian economy has been unstable. V. Gibogwe et al. (2022) delve into an examination of the relationship between institutional quality and economic growth. The authors likely investigate how the quality of institutions, such as governance, rule of law, and regulatory frameworks, influences the economic growth trajectory of the country; contribute insights to the field of economics, particularly regarding the role of institutions in shaping economic development in a specific context. The government should pay more attention to those industries that make a significant contribution to GDP. The government of the oil-importing country must establish long-term relationships with partners. The government of the oil-importing country must establish long-term relationships with oil exporters in order to purchase oil at competitive prices that would reflect on production costs for all industries.

2. RESEARCH METHODOLOGY

Modeling means the creation of mathematical or statistical models that help analyze various aspects of the oil and gas industry and predict its behavior in various scenarios. Here are some of the ways in which modeling and mediation are applied in the oil and gas industry in Kazakhstan (Figure 1). It is assumed that the price of imported oil is the most important component that affects the world economy. Despite the growing debate around the best replacement for sustainable energy sources such as water, the sun or nuclear power, oil does play a key role in the world's vast economy.

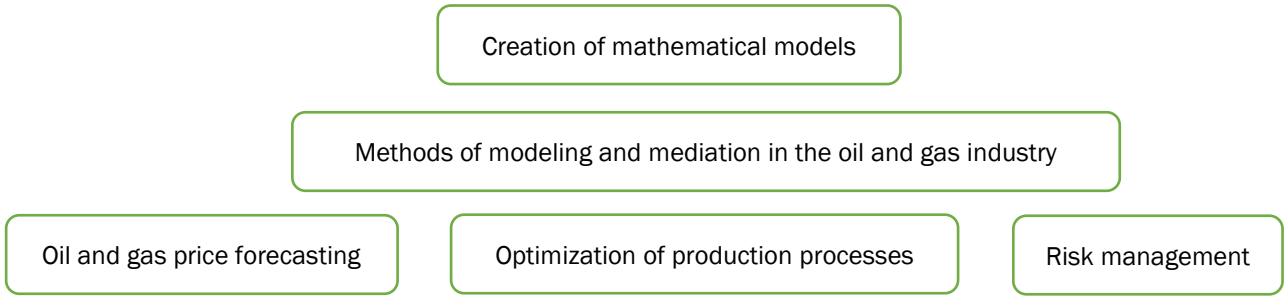

Figure 1. Methods of modeling and mediation in the oil and gas industry

Source: Compiled by the author

According to Figure 1, modeling and mediation methods in the oil and gas industry that are applied:

- Forecasting oil and gas prices. Modeling allows you to predict oil and gas prices based on data on world markets, supply and demand, geopolitical factors and other relevant variables. It helps companies and the government make budgeting, investment and other strategic decisions.
- Optimization of production processes. Simulation is used to optimize production processes in the production, transportation and processing of oil and gas. This helps to reduce costs and increase the efficiency of operations.
- 3 Risk management. Modeling allows you to assess the risks associated with oil and gas activities, such as price changes, environmental risks, technological accidents, etc. This helps to develop strategies for managing risks and protecting against potential threats.
- Making decisions about projects. Mediation involves an analysis of the various factors and interests involved in oil and gas projects, such as government agencies, investors, local communities and environmental organizations. Mediation helps to reconcile the interests of the parties and find compromises in order to implement projects with the greatest benefit and minimum conflicts.
- Industry development planning. Modeling is used to develop long-term strategies for the development of the oil and gas industry in the Republic of Kazakhstan. This includes forecasting the need for personnel, investment projects, technological development and other important aspects.
- Creation of mathematical models. Development of models that take into account various factors that affect oil prices and their interaction with various sectors of the economy of Kazakhstan. These models can be based on statistical data, historical trends and other relevant variables.

In general, modeling and mediation in the oil and gas industry of the Republic of Kazakhstan helps to increase the efficiency and sustainability of the industry, as well as minimize the risks and conflicts associated with its activities. These are important tools for making informed decisions and successfully developing this key sector of Kazakhstan's economy. The development of strategies for the development of the economy of Kazakhstan, taking into account the volatility of oil prices and scenarios for the development of various sectors, helps to prioritize investments and develop long-term plans for sustainable economic growth. The oil industry of Kazakhstan is not only the most important industry, it is one of the main components of the country's economic security and independence. Tax revenues from the development of oil fields and the sale of oil make it possible to implement social programs and strengthen domestic political stability.

The attractiveness of the oil and gas sector is still high due to the corresponding level of competitiveness of wages in the industry, therefore, in this direction, it is necessary to develop a competent social policy. Oil companies-subsoil users are important and active agents of economic and social development, as they receive income as a result of the development and use of oil fields in Kazakhstan. According to contracts concluded with subsoil users, they are obliged not only to use goods and services produced by domestic producers in their activities, to attract Kazakhstani personnel to perform work, but also to train Kazakhstani specialists at the expense of income from subsoil use. In the context of large markets such as China and India, which are driving global economic growth, mining companies should ask themselves how they can diversify their customer base and strengthen demand (Table 1).

Table 1. Global production and the impact of COVID-19 on the activities of mining companies, %

Country	*Copper*	*Gold*	*Iron*	*Coal*	*Nickel*
USA	7	6		9	
Canada	7	5			
Brazil			19		
Peru	12				
Argentina	28				
Congo	7				
South Africa				3	
Russia		9	4	4	10
China	13	8	14	46	

India			8	10	
Philippines					16
Indonesia				7	30
Australia		10	37	6	7
New Caledonia					8

Source: https://www.pwc.ru/ru/publications/mine-2020/mine-2020.pdf

Currently, Kazakhstan is an attractive country for attracting foreign investment in the oil and gas sector, as the country's position in the overall ratings of the conditions for doing business is generally favorable and growing in comparison with other countries. Given this, the use of strategic planning by oil and gas companies will be able to successfully counter new global challenges and threats. Kazakhstan, rich in hydrocarbon raw materials, has always sought to develop a deep processing sector in order to reorient its raw material potential towards the production of high value-added products. For many years, in a country that annually increases oil and gas production, special programs have been developed and adopted for the development of the hydrocarbon processing sector and the production of high value-added products.

Kazakhstan has developed a Concept for the Development of the Fuel and Energy Complex (FEC) until 2030, developed in June 2014, which is a key document defining the strategic goals of the exploration and production sector. According to this concept, in the future until 2030, the oil industry will:

- economic incentives have been created to attract investment in exploration and efficient technological development of oil production;
- the personnel potential of the oil and gas industry is provided;
- technology transfer in the oil production segment is ensured;
- the domestic market of oil products is provided, the capacities for oil refining are expanded;
- a competitive market for petroleum products and oil refining has been developed.

More than 200 oil fields have been discovered on the territory of Kazakhstan. 62% of the country's area is occupied by oil and gas regions. A significant part of the deposits is concentrated in the west of Kazakhstan: in Atyrau, Mangistau, West Kazakhstan and Aktobe regions. In terms of proven oil reserves, Kazakhstan ranks 12th in the world - 3.9 billion tons. Natural gas reserves amount to 2.7 trillion cubic meters. m - 14th place in the world. At the current level of production, Kazakhstan's proven oil and condensate reserves are sufficient for more than 45 years (Figure 2).

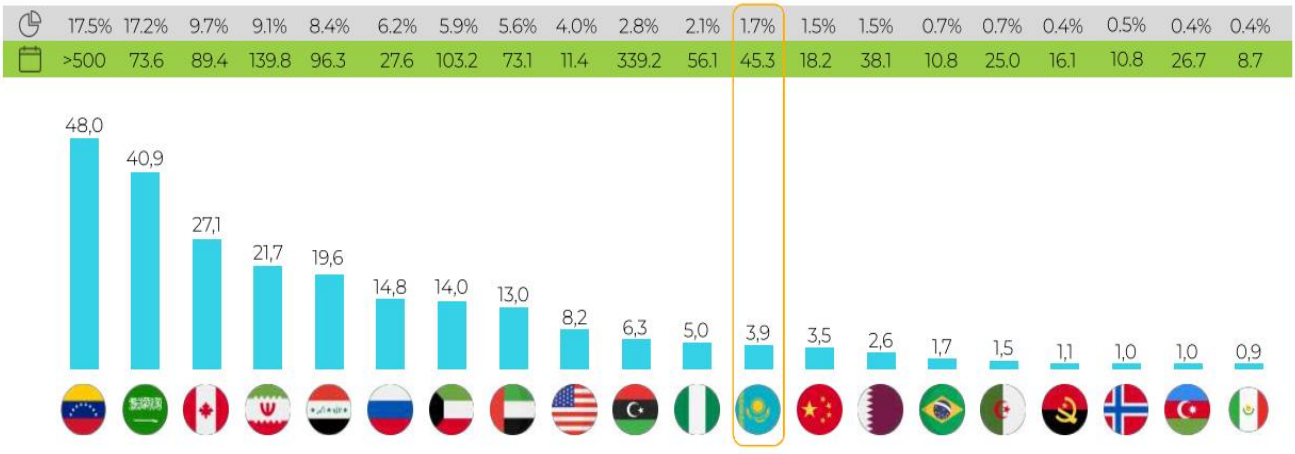

Figure 2. Proved reserves of oil and condensate by countries, billion tons

Source: https://jusananalytics.kz/

Despite high diversification and a significant share of participation of the national company, most of the oil and gas production is controlled by foreign partners. Annually, about 35% of export earnings are paid to foreign investors. Three large oil and gas projects - Tengiz, Karachaganak and Kashagan - remain drivers in the country's oil production. They will make a significant contribution to the economic growth of the country in the medium term. In 2021, oil production amounted to 85.9 million tons (the share of domestic consumption - 23%), gas production - 54.2 billion cubic meters (61%). Over the past 30 years, Kazakhstan has increased oil production by 3.5 times, and in terms of production for 2021, it ranks 13th in the world (2% of global production) (Figure 3).

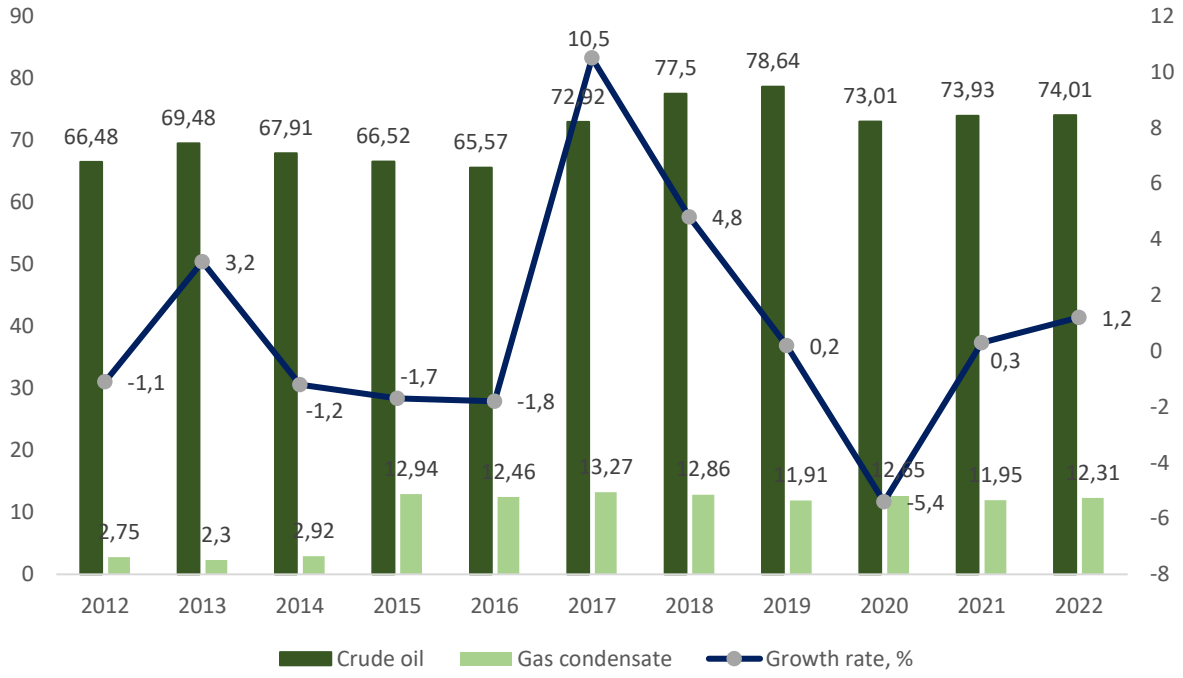

Figure 3. Dynamics of oil and condensate production for 2012-2022, million tons

Source: https://jusananalytics.kz/

Natural gas production has increased almost 6 times since Kazakhstan gained independence. The confident and stable growth of hydrocarbon production in Kazakhstan contributed to the country's entry into the top 10 oil exporting countries (Figure 4).

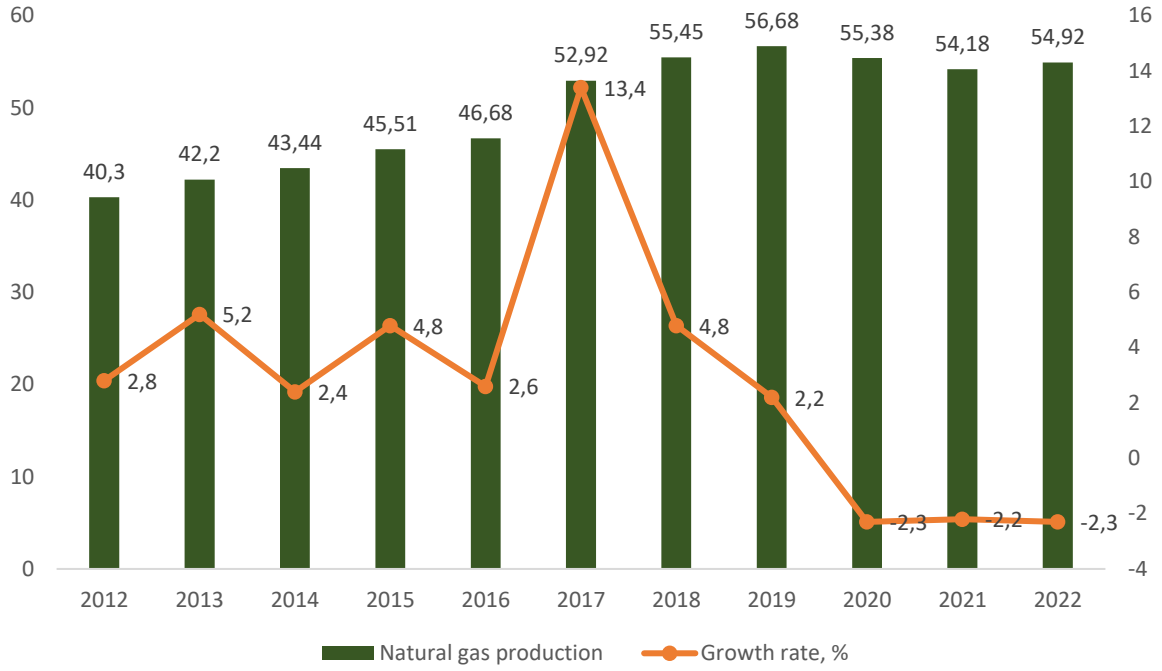

Figure 4. Dynamics of natural gas production for 2012-2022
Source: https://jusananalytics.kz/

In the short and medium term, oil and gas production in Kazakhstan will tend to increase significantly due to favorable conditions and increased demand in the energy markets. In 2022, oil production is expected to be around 87 million tons, and after 2024 it may reach 100 million tons.

According to the new political course of the established state of the Strategy "Kazakhstan - 2050", Kazakhstan should move from simple supplies of raw materials to cooperation in the field of energy resources processing and the exchange of the latest technologies.

Given all of the above, the role of the oil and gas industry in Kazakhstan to this day remains undeniably significant and high. At the same time, it is necessary to have an empirical assessment of how dynamic changes in the output of the oil and gas industry can have a so-called “shock” effect on the main macroeconomic indicators of Kazakhstan.

In Kazakhstan, the main share of oil refining is carried out by four oil refineries (refineries): Atyrau, Pavlodar, Shymkent and Caspi Bitum. The share of light oil products (gasoline, diesel fuel, jet fuel and liquefied gas) at refineries is 71%, dark (fuel oil, bitumen and vacuum gas oil) - 23%, petrochemicals and other refined products - 6%.

Oil and gas condensate provide about 60% of Kazakhstan's merchandise exports. The National Fund is replenished by 99% with proceeds from the oil and gas sector. Over the past 10 years, transfers from the National Fund to the Republican budget amount to 30-45%. Taking into account the amounts of export customs duties on crude oil and oil products, the Republican budget is replenished by 30-50% at the expense of the oil and gas industry. The amount of revenues to the National Fund directly depends on the price of oil (Figure 5).

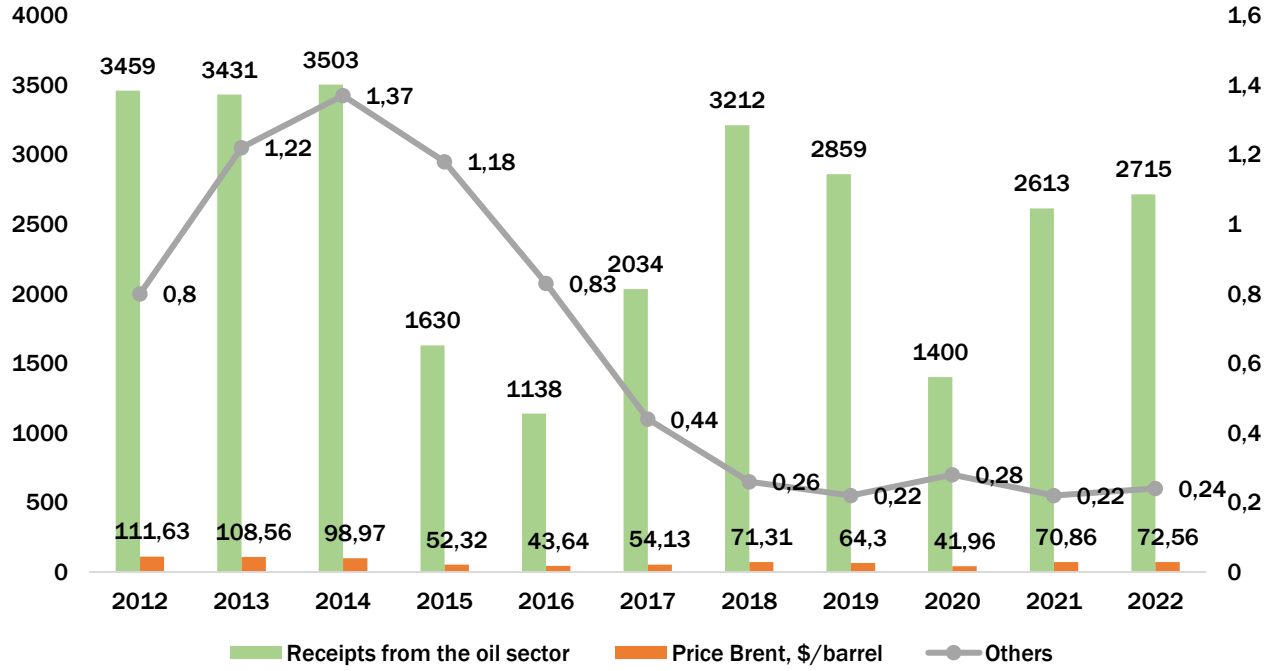

Figure 5. Dynamics of receipts to the National Fund and the price of oil, billion tenge

Source: https://jusananalytics.kz/

The price of oil strongly influences the value of shares of oil companies in the Republic of Kazakhstan. Since the revenues of oil companies are directly dependent on oil prices, changes in world oil prices can have a significant impact on the financial results of these companies. The impact of oil prices on share prices can be explained by the following points:

- Revenues from oil sales. The price of oil is one of the key factors determining the income of oil companies. When oil prices rise, companies earn more revenue from the sale of their oil, which can lead to increased profits and improved financial performance.
- Investment attractiveness. High oil prices could make oil stocks more attractive to investors. Investors will be interested in acquiring shares of companies that predictably grow with rising oil prices.
- Asset valuation. The price of oil also affects the valuation of the assets of oil companies. High oil prices could lead to an increase in the cost of oil reserves and projects, which is positively reflected in the company's overall valuation.
- Investment decisions. In the event of a fall in oil prices, oil companies may face restrictions on domestic investment and project development.
- Geopolitical risks. Oil companies in Kazakhstan are also exposed to geopolitical risks, which can greatly affect oil prices. Geopolitical tensions, such as conflicts in oil-producing regions or changes in oil supply policies, can cause significant price fluctuations, which will affect the value of companies' shares.

In general, the price of oil plays a critical role in determining the value of shares of oil companies in Kazakhstan. Changes in oil prices can cause significant fluctuations in share prices and affect the investment decisions and financial stability of companies in this industry. In this context, companies face a difficult task, on the one hand, to respond flexibly and quickly to market fluctuations, and on the other hand, to form the necessary financial instruments to improve operational efficiency and sustainable development.

3. APPLICATION FUNCTIONALITY

The financial sector is becoming increasingly important where finance in this context is a way of transferring resources in an economy driven by debt and liabilities, which creates certain incentives for economic agents, including companies, to be deeply involved in financial markets. Rapid growth in the use of external financing by companies adapting to new conditions. Based on the materials of JSC KazTransOil (KZTO), which has the status of a national operator for the main oil pipeline, we will consider the impact of prices on the profitability of the company's securities using the Sharpe model.

Changes in the market index may change the price of the i-security accordingly. Such changes are random and interconnected and therefore are represented by the market model in the form of a regression equation (characteristic line of a security):

$$m_i = \alpha_i + \beta_i m_r + \varepsilon_i \quad (1)$$

where

m_i – return on security i over time t (dependent variable);

m_r – return on the market index for the same period (independent variable);

α_i – regression line shift coefficient, which characterizes the expected yield of the i-th security, subject to the yield of the market index;

β_i – the slope of the regression line characterizing the magnitude of the risk;

ε_i – random error.

The coefficient β of the market model of a security reflects the sensitivity of the security's return to the return of the market index. The β-coefficient evaluates the change in the yield of individual securities relative to the dynamics of the market yield, which can be positive or negative:

- if β>0, then the yield of the security in question changes in the same way as the yield of the market.
- if β<0, the performance of the security and the market index will move in opposite directions.

Statistical data on the stock quotes of the company in question and the values of the KASE index for the 1st quarter of 2021 and 2022 are presented in Table 2.

Table 2. Comparative analysis of statistical data on the quotes of the shares of the company JSC "KazTransOil" and the values of the KASE index for the 1st quarter of 2021 and 2022

Data of 1 q. 2021	*Data of 2 q. 2022*	*Index KASE 1 q. 2021*	*Index KASE 1 q. 2022*	*1 q. 2021*	*1 q. 2022*
05.01.21	05.01.2022	2675,59	3565,02	985,06	1065,06
06.01.21	11.01.2022	2711,65	3626,91	986,50	1071,19
08.01.21	12.01.2022	2718,93	3598,79	994,88	1071,20
11.01.21	13.01.2022	2781,39	3600,32	994,04	1064,00
12.01.21	14.01.2022	2793,58	3568,02	1025,00	1073,00
13.01.21	17.01.2022	2812,96	3461,87	1033,00	1052,00
14.01.21	18.01.2022	2803,89	3481,12	1043,99	1062,00
15.01.21	19.01.2022	2858,01	3461,78	1049,97	1056,90
18.01.21	20.01.2022	2848,22	3481,20	1044,99	1054,50
19.01.21	21.01.2022	2831,64	3488,04	1027,21	1046,50
20.01.21	24.01.2022	2815,08	3440,64	1001,00	1036,00
21.01.21	25.01.2022	2797,34	3433,10	998,00	1035,00
22.01.21	26.01.2022	2818,67	3455,01	996,99	1070,00
25.01.21	27.01.2022	2814,33	3507,40	994,49	1105,00
26.01.21	28.01.2022	2817,99	3523,62	1000,00	1099,99
27.01.21	31.01.2022	2796,75	3549,26	999,96	1129,00
28.01.21	01.02.2022	2811,98	3491,89	989,99	1100,00

29.01.21	02.02.2022	2794,00	3497,76	996,00	1098,05
01.02.21	03.02.2022	2800,62	3513,86	987,02	1099,99
02.02.21	04.02.2022	2791,22	3515,29	992,58	1101,00
03.02.21	07.02.2022	2812,37	3513,14	993,19	1096,00
04.02.21	08.02.2022	2798,12	3530,94	987,65	1099,00
05.02.21	09.02.2022	2819,68	3549,59	990,01	1098,01
08.02.21	10.02.2022	2857,78	3582,25	993,00	1107,00
09.02.21	11.02.2022	2862,59	3570,87	992,00	1111,94
10.02.21	14.02.2022	2847,48	3537,35	995,99	1105,00
11.02.21	15.02.2022	2847,99	3543,10	1003,89	1100,00
12.02.21	16.02.2022	2858,86	3556,59	1002,50	1102,41
15.02.21	17.02.2022	2858,41	3542,45	1001,08	1106,00
16.02.21	18.02.2022	2888,44	3548,30	1019,99	1107,90
17.02.21	21.02.2022	2946,07	3520,27	1017,00	1100,55
18.02.21	22.02.2022	2984,64	3436,34	1023,99	1084,00
19.02.21	23.02.2022	2977,59	3478,38	1017,00	1094,00
22.02.21	24.02.2022	2961,16	3386,14	1010,00	1055,00
23.02.21	25.02.2022	2962,75	3453,42	1016,00	1045,45
24.02.21	28.02.2022	2972,33	3361,98	1015,00	1050,00
25.02.21	01.03.2022	2973,70	3390,31	1025,18	1050,03
26.02.21	02.03.2022	2965,68	3291,56	1023,97	1010,00
01.03.21	03.03.2022	2957,76	3202,65	1022,99	999,00
02.03.21	04.03.2022	2963,73	3171,73	1016,11	979,00
03.03.21	09.03.2022	2965,58	3334,96	1024,00	986,80
04.03.21	10.03.2022	2958,67	3393,02	1020,11	985,99
05.03.21	11.03.2022	2952,96	3377,47	1025,00	983,00
09.03.21	14.03.2022	2939,33	3357,37	1023,00	965,00
10.03.21	15.03.2022	2949,50	3358,40	1035,00	963,01
11.03.21	16.03.2022	2962,07	3336,70	1038,01	966,59
12.03.21	17.03.2022	2962,82	3346,83	1054,00	975,18
15.03.21	18.03.2022	2967,17	3372,76	1071,96	975,99
16.03.21	24.03.2022	2988,30	3339,66	1077,84	967,43
17.03.21	25.03.2022	3013,60	3317,86	1095,00	962,90
18.03.21	28.03.2022	3020,09	3354,94	1142,00	989,45
19.03.21	29.03.2022	3051,95	3348,83	1123,95	1009,95
25.03.21	30.03.2022	3087,93	3344,05	1100,02	1010,00
26.03.21	31.03.2022	3061,33	3348,63	1100,00	1014,00
29.03.21		3073,84		1106,96	
30.03.21		3097,92		1109,99	
31.03.21		3099,17		1117,00	
23.02.21	25.02.2022	2962,75	3453,42	985,06	1065,06

Source: https://jusananalytics.kz/

The β coefficient is a measure of the relative volatility of a stock's price relative to the rest of the market. Securities with β>1 are considered more aggressive and riskier than the market as a whole, while less risky securities have β<1.

The beta coefficient is considered to be an indicator of systematic risk due to general market conditions. Prudent investors prefer stocks with a low beta factor.

Based on the initial data, the daily values of returns for the specified period of time were calculated without taking into account the payment of dividends according to the formula:

$$m_{ti} = \left(\frac{q_{ti}}{q_{(t-1)i}} - 1 \right) \cdot 100, \qquad (2)$$

where:

q_{ti}, $q_{(t-1)i}$ – quotes of the i-th stock at the end of the current t and previous (t-1) time periods.

The daily rate of return for each stock is the rate of return that would be earned if an investor bought the stock at the end of (t-1) days and sold it at the end of the next t days. The average daily return for each stock was then determined.

$$\overline{m_i} = \frac{\sum_{t=1}^{n} m_{ti}}{n}, \quad (3)$$

where:

n – the number of days in the analyzed period.

Also, as an indicator of risk assessment, standard deviations were calculated, determined by the formula:

$$\sigma_i = \sqrt{\frac{\sum_{t=1}^{n} \left(q_{ti} - \overline{m_i}\right)^2}{n}}, \quad (4)$$

The greater the value of the standard deviation, the greater the risk of the security. The calculated indicators are shown in Table 3.

Table 3. Calculated indicators of profitability of securities of the company JSC"KazTransOil", %

Data of 1 q. 2021	*Data of 2 q. 2022*	*1 q. 2021*	*1 q. 2022*
05.01.21	05.01.2022	–	–
06.01.21	11.01.2022	0,1462	0,5756
08.01.21	12.01.2022	0,8495	0,0009
11.01.21	13.01.2022	-0,0844	-0,6721
12.01.21	14.01.2022	3,1146	0,8459
13.01.21	17.01.2022	0,7805	-1,9571
14.01.21	18.01.2022	1,0639	0,9506
15.01.21	19.01.2022	0,5728	-0,4802
18.01.21	20.01.2022	-0,4743	-0,2271
19.01.21	21.01.2022	-1,7015	-0,7587
20.01.21	24.01.2022	-2,5516	-1,0033
21.01.21	25.01.2022	-0,2997	-0,0965
22.01.21	26.01.2022	-0,1012	3,3816
25.01.21	27.01.2022	-0,2508	3,2710
26.01.21	28.01.2022	0,5541	-0,4534
27.01.21	31.01.2022	-0,0040	2,6373
28.01.21	01.02.2022	-0,9970	-2,5686
29.01.21	02.02.2022	0,6071	-0,1773
01.02.21	03.02.2022	-0,9016	0,1767
02.02.21	04.02.2022	0,5633	0,0918
03.02.21	07.02.2022	0,0615	-0,4541
04.02.21	08.02.2022	-0,5578	0,2737
05.02.21	09.02.2022	0,2390	-0,0901
08.02.21	10.02.2022	0,3020	0,8188
09.02.21	11.02.2022	-0,1007	0,4463
10.02.21	14.02.2022	0,4022	-0,6241
11.02.21	15.02.2022	0,7932	-0,4525
12.02.21	16.02.2022	-0,1385	0,2191
15.02.21	17.02.2022	-0,1416	0,3257
16.02.21	18.02.2022	1,8890	0,1718
17.02.21	21.02.2022	-0,2931	-0,6634
18.02.21	22.02.2022	0,6873	-1,5038
19.02.21	23.02.2022	-0,6826	0,9225
22.02.21	24.02.2022	-0,6883	-3,5649
23.02.21	25.02.2022	0,5941	-0,9052

24.02.21	28.02.2022	-0,0984	0,4352
25.02.21	01.03.2022	1,0030	0,0029
26.02.21	02.03.2022	-0,1180	-3,8123
01.03.21	03.03.2022	-0,0957	-1,0891
02.03.21	04.03.2022	-0,6725	-2,0020
03.03.21	09.03.2022	0,7765	0,7967
04.03.21	10.03.2022	-0,3799	-0,0821
05.03.21	11.03.2022	0,4794	-0,3032
09.03.21	14.03.2022	-0,1951	-1,8311
10.03.21	15.03.2022	1,1730	-0,2062
11.03.21	16.03.2022	0,2908	0,3718
12.03.21	17.03.2022	1,5404	0,8887
15.03.21	18.03.2022	1,7040	0,0831
16.03.21	24.03.2022	0,5485	-0,8771
17.03.21	25.03.2022	1,5921	-0,4683
18.03.21	28.03.2022	4,2922	2,7573
19.03.21	29.03.2022	-1,5806	2,0719
25.03.21	30.03.2022	-2,1291	0,0050
26.03.21	31.03.2022	-0,0018	0,3960
29.03.21		0,6327	
30.03.21		0,2737	
31.03.21		0,6315	
average daily return, %		0,2307	-0,0831
standard deviation		1,1059	1,3919

Source: https://jusananalytics.kz/

The least squares method was used to estimate the Sharpe model parameters (α- and β-coefficients). Based on the calculations made, it will be possible to compare the approaches and financial risks that companies may have by placing their shares on the stock exchange. According to the calculations made for the 1st quarter of 2021, it can be concluded that the shares of KazTransOil JSC have an average daily return lower than the average for the financial market. As a result of data approximation, an equation was obtained for the relationship between the profitability of the company's shares and the profitability of the KASE index:

$$m_4 = 0{,}1890 + 0{,}1572\, m_r$$

With zero profitability of the stock market, the profit on shares of JSC Kaz-TransOil will be 0.1890%. The regression line has a positive slope ($\beta = 0{,}1572 < 1$)and the company's shares are not risky. This means that the profitability of the company's shares is growing at approximately the same rate. Establishing and maintaining such a balance requires the development of a management system, a management tool, the purpose of which is not to protect the organization from risk (as is traditionally envisaged in risk management), but to find the optimal combination of risks (the likelihood of negative consequences of risk events) and opportunities (the likelihood of positive consequences). decisions and actions taken), which leads to an increase in the efficiency of the company.

CONCLUSION

Improvement and development of the entire system of national youth policy involves the definition of clear priorities, principles, tasks and mechanisms for its implementation. This includes the following aspects: a) Prioritization. It is necessary to determine the main directions and goals that are the most important for supporting young people and ensuring their active participation in the social, economic and political life of the country. These can be education, employment, development of youth entrepreneurship, healthcare, culture and other aspects. b) Formulation of principles. It is necessary to develop the fundamental principles that guide the youth policy. These can be principles of equality, fairness, participation, cooperation, as well as respect for the rights of young people and their unique needs. c) It is necessary to clearly define the tasks that will be solved within the framework of youth policy. This can be the creation of

a supporting infrastructure, providing access to education and health care, creating new jobs, as well as developing measures to attract young people to actively participate in public life. d) Implementation mechanisms. It is necessary to develop effective mechanisms and tools for the implementation of youth policy. This can be the creation of special programs and projects, the provision of grants and scholarships, the development of educational courses and trainings, as well as the involvement of young people in the decision-making process.

Improving the system of national youth policy is an important task for ensuring the well-being and sustainable development of the country, as well as the active participation of young people in the creation of the future society. In the Republic of Kazakhstan, higher and postgraduate education is given sufficient attention in accordance with the State Program for the Development of Education of the Republic of Kazakhstan for 2020-2025, where one of the priority areas is the allocation of grants for master's and doctoral studies. This is directly the investment of the state, invested in human potential in order to return the acquired knowledge to the economy of the state.

An objective assessment of the effectiveness, efficiency and effectiveness of the measures, actions and steps taken in the field of youth policy is possible only if there are uniform criteria, indicators and indicators in this industry. Until recently, there was no unified approach to their definition in assessing the effectiveness of the ongoing youth policy. This made it possible to evaluate the effectiveness of youth policy through the prism of a subjective understanding of the expediency of a particular activity, both at the national level and at the level of subjects.

Improving the entire system of national youth policy, including the definition of priorities, principles, tasks and implementation mechanisms, plays an important role in solving youth problems and should be carried out through the following areas:

- Systematic and continuous study of national policies aimed at adapting the younger generation to new realities and stimulating social and political activity and the formation of citizenship. This involves the use of a targeted approach that takes into account different age groups, social status, wealth, regional characteristics and social preferences of young people.
- Investing in youth projects that create a new understanding of the role and place of young people in society. For young people, not only guarantees and access to resources should be created, but also conditions for the manifestation of their intellectual, physical and creative potential.
- Providing young people with better information at the national and regional level on issues that matter to them. For example, this may include information on affordable housing and housing development opportunities for young people. The state must strive for the stability of the existing system, which makes the development of a national youth policy an urgent task.

All these areas will improve the situation of young people, ensure their active participation in public life and contribute to the development of national potential through the implementation of strategic measures and mechanisms of the national youth policy.Despite the challenges and risks associated with fluctuations in oil prices and changes in the global energy environment, the oil industry in Kazakhstan remains an important sector of the economy. Developing strategies for sustainable development and economic diversification can contribute to the long-term prosperity of this industry and the country as a whole.

From the prospects for the oil industry of the Republic of Kazakhstan (RK), taking into account the impact of oil prices and profitability of companies, the following aspects can be noted:

- Recovery of world oil prices. The prospects for the oil industry in Kazakhstan are closely related to the recovery of world oil prices after a period of low prices, which were caused by a global decline in oil demand and an oversupply. An increase in world oil prices could lead to an increase in the profitability of oil companies and stimulate new investment in the development of oil fields.
- Development of oil fields. Kazakhstan has vast oil reserves, and the development of new fields can help increase production and increase the profitability of oil companies. It will also create opportunities for job creation and infrastructure development.
- Diversification of the economy. Reducing dependence on oil revenues is a priority for the government of Kazakhstan. The development of other sectors of the economy will help reduce the risks

associated with fluctuations in oil prices and make the economy more resilient to global oil markets.

- Energy transformation. With the growing global demand for alternative energy sources and the pursuit of cleaner technologies, the oil industry is also facing transformation challenges. Investments in the development of renewable energy sources and technologies to reduce the environmental impact can be a promising development direction for oil companies.
- Geopolitical factors. The oil industry in Kazakhstan is also affected by geopolitical events such as political conflicts and changes in world politics. Developing risk management strategies for geopolitical factors can help improve stability and predictability in the oil industry.

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