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RISK MANAGEMENT IN OIL AND GAS ENTERPRISES OF AZERBAIJAN: THE SOFAZ EXPERIENCE

Abstract

The article deals with the development of oil and gas sector - the main strategic and diplomatic force in the world policy of oil and gas resources, a source of formation of economic and political strategy, an important factor and significance of national power, as well as the aspects of risk management at oil and gas enterprises of the country on the experience of SOCAR. Oil and gas are an important energy component of industrial potential in the modern era, being an indispensable production, economic and financial resource. It was noted that ensuring rapid development of modern civilization is impossible without fuel and energy resources - oil and gas. These resources are provided by energy, transport and other infrastructures that form the basis for the development of all sectors of the country's economy, and the identification, systematization and assessment of risks of formation and development of these industries are considered in the article as important factors. The oil and gas complex serves as a key, powerful industry that provides investments for the development of economic sectors.

The development programs and strategies implemented in this direction since the first years of independence ensure the gradual integration of the country's economy into the world economy. Thus, the targeted economic reforms carried out within the framework of the implemented state programs, concepts and development strategies have ensured the creation of new economic institutions, industrial enterprises, including the oil and gas industry at the level of world standards, and as a consequence, sustainable and stable development of all sectors of the country's economy.

Keywords: *Azerbaijan, oil, gas, risks, management.*

INTRODUCTION

The oil and gas industry of Azerbaijan, as one of the main sectors of the country's economy, is exposed to a number of risks. Managing these risks is very important both in terms of increasing productivity and ensuring safety. Risk management in the oil and gas industry of Azerbaijan is very important for the sustainable and long-term development of both the state and companies operating in the private sectors. Effective risk management in this area has a positive impact not only on the local economy, but also on international cooperation.

MAIN SECTION

The issue of risk management in oil and gas enterprises in Azerbaijan is of great relevance, especially due to the large role of the oil and gas sector in the country's economy. Oil and gas production, as well as its export, are one of the main sources of income for Azerbaijan. Operations in this area are faced with various risks, which can have serious consequences both in the economic and environmental spheres.

Currently, the demand for energy resources in the world is growing, and therefore oil and gas companies face a large number of opportunities and risks in all areas of activity: exploration, production, processing, transportation and marketing of oil and gas products. The oil and gas industry is characterized by a number of specific features that distinguish it from other industries, which lead to the emergence of risks inherent in it. Risks can be of different types and levels, therefore, multidisciplinary approaches are applied to their management [2].

Table 1

Main risks in the Azerbaijani oil and gas sector

Technical and production risks	Environmental risks	Economic risks	Security risks
-Technological errors and failures: Oil and gas production processes are complex and highly technological. Equipment failures or technological errors can lead to downtime, adverse effects, and costs. -Equipment obsolescence: In some oil and gas fields, equipment wears out over time and needs to be repaired or replaced.	-Environmental pollution: Activities in the oil and gas industry can have a major impact on the environment. Gas leaks, oil spills, and the release of other pollutants threaten the ecosystem. -Climate change: Climate change has increased the risk of natural disasters (such as hurricanes and lightning strikes), especially on offshore oil platforms.	- Oil price fluctuations: Global oil prices are volatile and can have a significant impact on the Azerbaijani economy. A drop in oil prices could result in a decline in revenues. -Competition in international markets: The prices of oil and gas offered by other countries in the international market can also affect the market share of Azerbaijani products.	-Security incidents: The safety of workers working in the oil and gas sector is always a priority. Fires, explosions, and other accidents can harm the health of workers and the operations of the enterprise. -Terrorism and political risks: Political instability, war, or terrorist acts in the region can lead to attacks on oil and gas facilities.

Thus, the above-mentioned approaches of oil and gas enterprises lead to the corresponding industrial risks that affect both current activities and the activities of companies in the long term.

There are many classifications of risks in the oil and gas industry. The most detailed risk analysis was carried out in the works of scientists F. R. Dixit, R. S. Pindik, G. Tintner and M. Montalbano. The classification developed by them is very broad and is determined primarily by the purpose of investment in oil and gas field development projects [3]. The classification of A. F. Andreeva, V. F. Dunaeva, V. D. Zubareva is based on the division of risks into general and specific, as well as the identification of separate types of risks depending on the stages of implementation of an oil and gas project: exploration, prospecting, field development, transportation and processing of oil, gas and condensate.

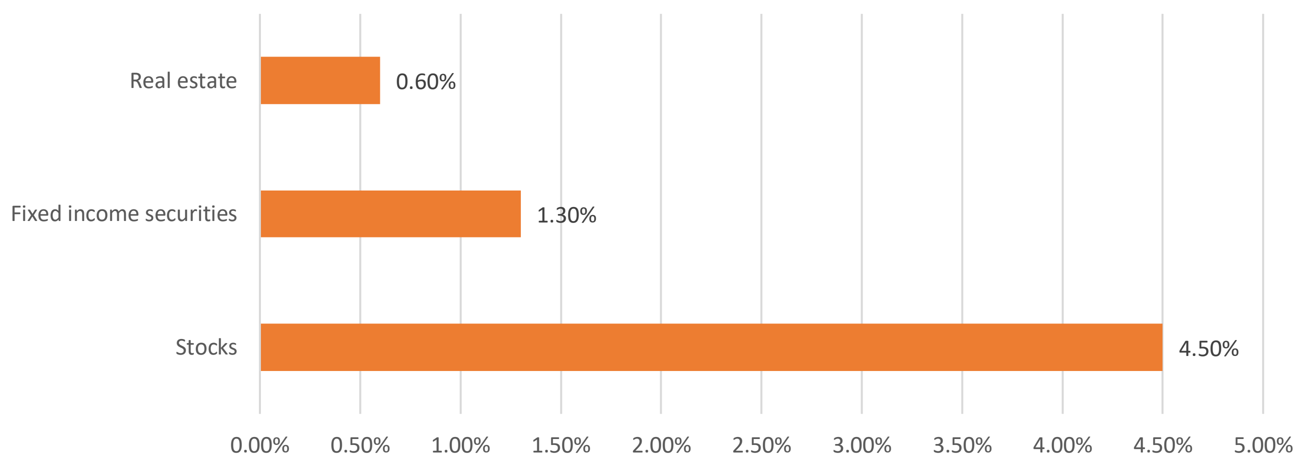
To update information on significant risks of oil and gas companies, the largest enterprises were identified based on financial results of SOFAZ for 2023, after which an analysis of the annual reports for 2023 was conducted, based on which the main risks of these enterprises were identified.

SOFAZ manages risks within the framework of the Investment Rules and Investment Policy. Risk management and monitoring procedures are implemented by conducting analyses on various types of risks. Market risk, credit risk and liquidity risk indicators, as well as other relevant risk indicators, are reflected in internal and external reporting.

The Fund's market risk is affected by factors such as changes in interest rates, credit risk premiums, stock prices, foreign exchange rates, gold prices and changes in the value of private assets. A number of measures and analyses are applied to monitor the market risk associated with the Fund, including, but not limited to, weighted average investment period (duration), Value at Risk (VAR), tracking error, concentration analysis, scenario analysis and stress tests [4].

VaR is a commonly accepted metric for measuring the overall risk of a portfolio. We calculate the VaR of an investment portfolio using Monte Carlo and historical data simulations. As of December 31, 2023, SOFAZ's 1-year, 95% confidence interval VaR was estimated at USD 3,601 million, or 6.4% of the investment portfolio, an increase from the previous year (USD 2,559 million estimated for 2022) [1].

Figure 1. Distribution of shares in the yield of financial instruments (excluding the effect of exchange rate)



Source: *https://oilfund.az/report-and-statistics/report-archive*

The tracking error indicator is monitored on an ongoing basis to monitor the deviation of the profitability and risk parameters of SOFAZ's investment portfolio from the relevant benchmark indicators. The tracking error limit for equity sub-portfolios managed by an external manager is pre-determined at an annual limit of 30 basis points. The annual tracking error indicators as of December 31, 2023 are reflected in the table below.

Table 2

Tracking errors

Foreign manager	**Tracking error**
"UBS Global Asset Management" (under the mandate of "MSCI World")	13
"State Street Global Advisors"	16
Mellon Investments Corporation	13
"BlackRock Investment Management"	8
"Sumitomo Mitsui Trust International"	14

"UBS Global Asset Management" (under the "MSCI Europe ex UK index" mandate)	16

Source: *https://oilfund.az/report-and-statistics/report-archive*

In accordance with SOFAZ's investment policy, the actual weighted average investment period (duration) of the debt obligations and money market instruments sub-portfolio may deviate from the weighted average investment period of the relevant benchmark by a maximum of six months. The duration indicators of the fixed income securities sub-portfolio are reflected in the table below.

Table 3

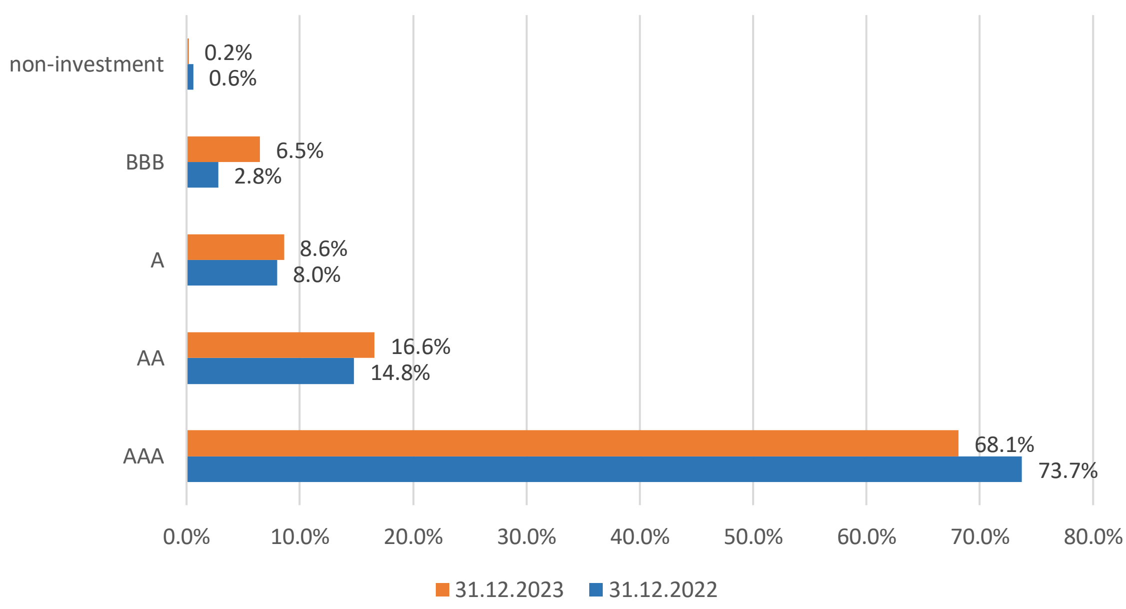
Duration indicators of the securities sub-portfolio

Markets instruments sub-portfolio	Sub-portfolio duration	Benchmark duration
US dollar	3,7	3,6
Euro	4,3	4,4
British pound	2,6	2,5
Australian dollar	1,9	1,9
Chinese yuan	1,9	1,8
Turkish lira	1,3	1,5

Source: *https://oilfund.az/report-and-statistics/report-archive*

The main objective is to effectively manage liquidity risk to ensure the smooth running of daily operations and meet financial obligations. Cash management is carried out taking into account the restrictions specified in the Investment Policy to maintain an adequate level of liquidity. Credit risk management is an important component of SOFAZ’s risk management procedures [5]. The Investment Rules regulate the credit ratings of fixed-income securities and their issuers, as well as determine credit limits for counterparties, bank accounts and banks and other financial institutions providing custodial services for securities. The graph below reflects the dynamics of the credit rating of the fixed-income securities portfolio from 2022 to 2023.

Figure 2. Distribution of fixed income securities portfolio by credit ratings



Source: *https://oilfund.az/report-and-statistics/report-archive*

Risk management within the framework of ARDF (Asset Risk Directive Fund) is a very important process and its results can be seen in various aspects. Proper risk management increases the sustainability of a company, institution or any organization, minimizes investment and operational risks, and also ensures more efficient use of resources. This helps the organization to protect itself from potential losses and make profitable decisions [6].

Risk management can lead to such results in the ARDF system, as such processes help to continuously reduce risks and support strategic development.

RESULT

Risk management in Azerbaijan's oil and gas sector is very important, as this sector's contribution to the economy is very large. By properly assessing and managing risks, enterprises can both continue their activities and make a better contribution to the country's economy. To do this, enterprises should conduct a comprehensive risk assessment and prepare an appropriate action plan against possible risks. In order to reduce dependence on the oil and gas sector, attention should be paid to economic diversification and the development of other sectors.

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Azərbaycanın neft-qaz müəsissələrində risklərin idarə edilməsi təcrübəsi

Xülasə

Məqalədə neft qaz sektorunun inkişafının təşəkkül tapmasından, neft-qaz resurslarının dünya siyasətində əsas strateji, diplomatik qüvvə, iqtisadi-siyasi strategiyanın formalaşma mənbəyi, milli gücün önəmli amili və əhəmiyyəti və SOCAR təcrübəsində ölkənin neft-qaz müəssisələrində risklərin idarə

edilməsi məsələləri tədqiq edilmişdir. Neft və qaz müasir dövrdə zəruri istehsal, iqtisadi və maliyyə resursu olmaqla sənaye potensialının mühüm energetik komponentidir. Qeyd edilmişdir ki, müasir sivilizasiyanın sürətli inkişafının təmin edilməsində yanacaq-energetika ehtiyatları, neft və qaz olmadan qeyri-mümkün olardı. Ölkə iqtisadiyyatının bütün sahələrinin inkişafının əsasını təşkil edən enerji, nəqliyyat və digər infrastrukturlar bu resurslar ilə təmin edilmiş və bu sahələrin formalaşdırılması və inkişafında risklərin müəyyənləşdirilməsi,sistemləşdirilməsi və dəyərləmdirilməsi mühüm amillər kimi məqalədə nəzərdən keçirilmişdir. Neft və qaz kompleksi iqtisadiyyatın sahələrinin inkişafına investisiya qoyluşu ilə təmin edən əsas güclü sektor funksiyasını yerinə yetirir.

Bu istiqamətdə müstəqilliyin ilk illərindən həyata keçirilən proqram və inkişa strategiyaları ölkə qtisadiyyatının dünya iqtisadiyyatına mərhələlərlə inteqrasiyasını təmin edilir. Beləki icra edilən dövlət proqramları, inkişaf konsepsiyaları və strategiyaları çərçivəsində aparılan məqsədyönlü iqtisadi islahatlar, yeni iqtisadi institutların, sənaye müəssisələrinin, o cümlədən neft və qaz sənayesini dünya standartları səviyyəsində yaradılmasını və nəticədə ölkə iqtisadiyyatının bütün sahələrinin davamlı və dayanaqlı inkişafını təmin etmişdir.

Açar sözlər: *Azərbaycan, neft, qaz, iqtisadiyyat və idarəetmə, proqram və strategiya, risk, risklərqiymətləndirmə.*

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Опыт управления рисками на предприятиях нефтегазовой отрасли Азербайджана

Резюме

В статье рассматривается развитие нефтегазового сектора, главная стратегическая и дипломатическая сила в мировой политике нефтегазовых ресурсов, источник формирования экономической и политической стратегии, важный фактор и значение национальной мощи, а также вопросы управления рисками на нефтегазовых предприятиях страны на опыте SOCAR. Нефть и газ являются важной энергетической составляющей промышленного потенциала, являясь важнейшим производственным, экономическим и финансовым ресурсом современной эпохи. Было отмечено, что обеспечение быстрого развития современной цивилизации невозможно без топливно-энергетических ресурсов - нефти и газа. Этими ресурсами обеспечены энергетическая, транспортная и другие инфраструктуры, составляющие основу развития всех отраслей экономики страны, а выявление, систематизация и оценка рисков формирования и развития этих отраслей рассматриваются в статье как важные факторы. Нефтегазовый комплекс выполняет функцию ключевой, мощной отрасли, обеспечивающей инвестиции для развития отраслей экономики.

Реализуемые в этом направлении с первых лет независимости программы и стратегии развития обеспечивают постепенную интеграцию экономики страны в мировую экономику. Таким образом, целевые экономические реформы, проводимые в рамках реализуемых государственных программ, концепций и стратегий развития, обеспечили создание новых экономических институтов, промышленных предприятий, в том числе нефтегазовой отрасли на

уровне мировых стандартов, и как следствие, устойчивое и стабильное развитие всех отраслей экономики страны.

Ключевые слова: *Азербайджан, нефть, газ, экономика и управление, программа и стратегия, риск, оценка риска.*