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ESG Approach to Financial Sustainability of Kazakhstan's Oil and Gas Companies

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ABSTRACT

The purpose of the study was to assess the impact of asset structure. It retained earnings on the strategic sustainability of oil and gas companies in Kazakhstan in the context of ESG integration. The analysis covers the period 2015–2024 and is based on the official financial statements of JSC KazMunayGas. The methodology included correlation analysis, regression modelling, ANOVA, and collinearity diagnostics. The results demonstrate that long-term assets and property, plant, and equipment (PPE) explain 97.6% of the variation in total assets ($R^2 = 0.976$, $p < 0.05$), while retained earnings account for 71.4% of the variation in total equity ($R^2 = 0.714$, $p = 0.002$). Conversely, current assets and cash equivalents show no significant effect on retained earnings ($R^2 = 0.076$, $p > 0.5$). All three hypotheses were confirmed: long-term assets and PPE significantly explained total assets, and retained earnings significantly explained equity. The obtained results demonstrated that long-term capital-intensive investments and reinvestment of profits constitute the main drivers of ESG-oriented sustainability. In contrast, short-term liquidity plays only a supporting role. Based on these findings, government policy should strengthen the integration of ESG indicators into mandatory reporting standards and provide incentives for reinvestment of retained earnings in sustainable projects. For corporate practice, prioritizing long-term investments and transparent ESG disclosure is recommended to align Kazakhstan's oil and gas sector with both national sustainable development priorities and international ESG standards.

KEYWORDS: Oil and Gas Sector, Asset Structure, Corporate Finance, Sustainability, Business Sustainability, Energy Economics, Green Economy

SCSTI: 06.71.03

JEL Code: G32, M14, Q41, Q43

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1. INTRODUCTION

Sustainable development has become one of the key guidelines of global economic policy. The focus is on environmental, social, and governance (hereinafter – ESG) aspects, which are gradually becoming not only a tool for corporate responsibility but also a factor in the investment attractiveness of companies. International experience demonstrates that integrating ESG approaches helps reduce risks, increase stakeholder confidence, and enhance long-term competitiveness.

ESG is of particular importance in commodity economies, where the environmental costs and social effects of energy companies' activities directly affect the sustainability of national development. In countries with a developed institutional environment, clear standards for information disclosure and monitoring systems are being formed. At the same time, in developing economies, attention is focused on creating basic assessment and regulation mechanisms.

The oil and gas sector in Kazakhstan plays a crucial role in shaping the country's budget revenues and its foreign economic position. At the same time, high dependence on hydrocarbons is accompanied by increased environmental and social risks. Despite the introduction of sustainable reporting elements and the expansion of corporate governance practices, challenges persist in the form of high industry concentration, limited innovative solutions, and insufficient transparency.

Statistics show that while key financial indicators of oil and gas companies are growing, instability in the area of environmental efficiency and social responsibility remains. This creates a contradiction between formal declarations and actual results, which increases the importance of a systemic analysis of ESG indicators. At the same time, there is a methodological gap: unlike developed economies, Kazakhstan lacks quantitative assessments of the impact of ESG factors on financial stability. This study addresses this gap by focusing on JSC KazMunayGas, the national oil and gas company that plays a systemic role in the economy.

The research task is to test three hypotheses:

H1: Growth in long-term assets and property, plant, and equipment leads to an increase in total assets.

H2: Current assets and cash do not have a statistically significant effect on retained earnings.

H3: Growth in retained earnings contributes to the increase in total equity.

The study aimed to identify the role of asset structure and internal profit accumulation in ensuring the sustainability of oil and gas companies in Kazakhstan, with an emphasis on the difference in the impact of long-term and short-term resources in the context of the ESG approach. The significance of the results lies in clarifying the mechanisms of financial sustainability in a resource-dependent economy and providing evidence-based recommendations for aligning corporate strategies with Kazakhstan's sustainable development agenda.

2. LITERATURE REVIEW

The sustainability of companies within the ESG framework is determined by the configuration of the asset structure and the profit capitalisation regime. The corresponding theoretical basis identifies institutional constraints, disclosure standards, and management mechanisms through which long-term sustainability is achieved. Juravle & Lewis (2008) identified institutional and behavioral barriers, including short-term profit orientation, weak investor demand, conflicts of interest, and limited SRI, that constrained the use of retained earnings and long-term assets for sustainability purposes. Kolk and Perego (2010) showed that the institutional environment and regulatory architecture determine the implementation of assurance for non-financial reporting. The key tools used are the AA1000AS (AccountAbility Assurance Standard), focused on assessing stakeholder engagement, and the ISAE 3000 (International Standard on Assurance Engagements),

providing independent verification of non-financial information (Sohn et al., 2013). They are supplemented by the use of the GRI (Global Reporting Initiative) guidelines, which set the structure and indicators of sustainable development (Michalczuk & Konarzewska, 2018). The likelihood of external verification is higher in countries with stakeholder-oriented corporate law, where the interests of various groups of participants are taken into account, as well as in conditions of weak government control, where assurance partially compensates for the lack of institutional guarantees. Capitalization of profits and redistribution into long-term assets is inhibited either by behavioral barriers or by institutional incomparability of reporting.

Retained earnings are a key internal source of long-term investments in fixed assets and environmental projects. At the same time, it is essential to consider complex risks and incorporate non-financial indicators into the business model and reporting. Therefore, Rezaee (2016) proposed an integrated concept of five dimensions of sustainability (EGSEE: economic, governance, social, ethical, environmental), which links the process of value creation with the interests of stakeholders. In capital-intensive sectors such as mining and processing, reputational and environmental risks drive companies' adoption of practices (Garcia et al., 2017). However, significant differences in approaches to information disclosure remain within the industry. Cardoni et al. (2019) found incomparability in oil and gas companies' reports: discrepancies concern consolidation boundaries (operational control vs equity share), choice of energy and emissions KPIs, interpretation of Scope 1–3, availability and level of assurance, degree of GRI compliance, and balance between quantitative and narrative disclosures. Erben Yavuz et al. (2024) showed that a corporate governance strategy based on the independence of the board of directors, the activity of the audit committee, and a diversified ownership structure creates conditions under which retained earnings and investments in PPE are considered not as elements of formal reporting, but as a management tool. Increasing the transparency and reliability of disclosures enhances the quality of resource allocation, making it possible to link it to the implementation of ESG projects. Koszel (2025) identified long-term assets and retained earnings as key measures of sustainable performance. Therefore, systematic monitoring and integration into strategic decisions are essential for unified and standardized reporting.

Asset structure is regarded as a central element of strategic sustainability. Therefore, the effective use of fixed assets ensures long-term reliability and reduced operational risks (Ratnayake & Liyanage, 2009). When a company has slack resources, such as unused cash or liquid asset reserves, it gains more freedom in its investment decisions. Companies can finance long-term projects without immediately attracting external capital, thereby preserving liquidity and striking a balance between short-term flexibility and long-term sustainability (Jalilvand & Kim, 2013; Campello & Giambona, 2013). The capital structure does not exist separately from the asset structure: the debt-to-equity ratio is determined by the composition of the balance sheet. The asset structure directly affects financial sustainability and management discipline through the capital structure.

When a company increases its plant, equipment, or other long-term physical assets, the market interprets this as a signal of future earnings growth as production capacity expands or infrastructure is modernized (Petrovic et al., 2016). Asset structure and management mediate between stakeholder interests and the company's strategic sustainability (Gavrikova et al., 2020). When a company modernizes its production facilities, invests retained earnings in environmentally friendly technologies, and optimizes the structure of its long-term and short-term resources, it brings these interests together. As a result, the business becomes more sustainable and predictable. Therefore, asset management is a tool that allows for considering the interests of different parties (shareholders, creditors,

employees, the state, and society) and simultaneously creates long-term value for the company. Ultimately, a balanced combination of long-term and short-term resources strengthens business resilience (Liu & Jia, 2023). In the oil and gas sector, this relationship is particularly evident, as asset structure determines production stability and the ability to finance large-scale investments (Ekpe, 2024).

Some studies considered internal sources of financing as the basis of corporate sustainability, noting their role in reducing dependence on external capital fluctuations and in determining the course of strategic development. Turygin (2018) argued that retained earnings, as the primary form of domestic savings, ensured long-term investment in fixed assets and were considered more sustainable than loans. According to Aimagambetova et al. (2020), capitalization growth and efficiency improvement depend on the ability of enterprises to accumulate and direct retained earnings to investment. In conditions of high capital intensity, it is retained earnings that reduce dependence on debt financing and mitigate the impact of market volatility (Alimoradi Jaghdari et al., 2020). Sustainability of internal savings in Kazakhstan increased investment attractiveness and attracted external capital (Nurasheva et al., 2024). The systematic use of retained earnings as a tool of corporate capitalization formed the strategic sustainability of a business (Tong & Kassenova, 2025).

Based on the conducted literature review, the following key variables were identified: total assets, long-term assets, property, plant, and equipment (hereinafter – PPE), retained earnings, current assets, cash and cash equivalents, and total equity.

3. RESEARCH METHODS

The conducted literature review enabled us to identify a set of key indicators that reflect the structure of assets and capital of oil and gas companies in Kazakhstan within the context of the ESG approach. The official materials of JSC KazMunayGas, published in the section of reporting for investors (KazMunayGas, n.d.), were used as a data source. The chosen study period (2015–2024) corresponds to the span of publicly available financial statements of JSC KazMunayGas, limiting the sample to ten annual observations. While longer series are typically preferred, empirical evidence indicates that ten yearly data points can still provide a viable basis for analysis. Hyndman and Kostenko (2007) and Jenkins and Quintana-Ascencio (2020) demonstrated that even three to five observations can provide acceptable regression estimates under low variance, while seasonal forecasting models may require as few as six observations for quarterly data and fourteen for monthly data.

Based on the identified indicators, three research hypotheses were formulated, presented in Table 1.

TABLE 1. Research hypotheses

Hypothesis	Dependent Variable (Y)	Independent Variables (X)
H1. Growth in long-term assets and property, plant, and equipment leads to an increase in total assets	Total Assets (TA)	Long-term Assets (LA), Property, Plant, and Equipment (PPE)
H2. The increase in current assets and cash does not have a statistically significant effect on the retained earnings of oil and gas companies in Kazakhstan.	Retained Earnings (RE)	Current Assets (CA), Cash and Cash Equivalents (CCE)
H3. Growth in retained earnings contributes to the increase in total equity	Total Equity (TE)	Retained Earnings (RE)

Note: compiled by the authors

To test these hypotheses, the financial statements of oil and gas companies for the period 2015–2024 were used. Against this background, the use of ten annual observations is methodologically sufficient for identifying basic relationships between asset structure, retained earnings, and sustainability indicators. The analysis was conducted in several stages, each of which was aimed at testing the hypotheses put forward and assessing the stability of the models. At the first stage, correlation analysis was used to identify the direction and strength of the relationships between the indicators, by following formula (1):

$$r_{xy} = \frac{\sum(x_i - \overline{x})(y_i - \overline{y})}{\sqrt{\sum(x_i - \overline{x})^2 \sum(y_i - \overline{y})}} \quad (1)$$

where:

r_{xy} – correlation coefficient between variables x and y;

x_i, y_i – average values of the samples.

At the second stage, regression models were built, which made it possible to quantitatively assess the contribution of individual factors to the formation of dependent variables by following formula (2):

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n + \varepsilon \quad (2)$$

where:

Y – the dependent variable;

X – the independent variables;

β – the estimated coefficients;

ε – the error term.

To check the quality of the models, an ANOVA test was used, which made it possible to determine the statistical significance of the included predictors by following formula (3):

$$F = \frac{SSR/k}{SSE/(n-k-1)} \quad (3)$$

where:

SSR – the regression sums of squares;

SSE – the error sum of squares;

k – the number of predictors;

n – the sample size.

Additionally, diagnostics for multicollinearity were performed using VIF statistics and tolerance, ensuring the stability of the coefficient estimates. Multicollinearity was assessed using variance inflation factors (VIF) and tolerance, which are considered standard and sufficient diagnostics in regression analysis (O'brien, 2007; Kyriazos & Poga, 2023). Thus, the comprehensive use of statistical procedures enabled the comparison of the obtained results with the hypotheses and the identification of key factors determining the financial stability of oil and gas companies in Kazakhstan.

4. RESULTS

Evaluation of the dynamics of ESG indicators in the oil and gas sector allows not only to identify the current state of sustainability of companies, but also to trace the directions of their adaptation to institutional and market changes. The analysis reflects how financial performance is combined with environmental and social parameters, forming the basis for long-term competitiveness. The presented data enable the assessment of the balance between economic interests and the requirements of sustainable development, which is of fundamental importance for the industry, as it determines the macroeconomic stability of Kazakhstan.

Figure 1 illustrates the overall upward trend in total assets and equity.

There was a steady growth in assets and capital between 2015 and 2024 in oil and gas companies. Notably, total assets almost doubled during the period, while capital increased significantly, providing the companies with opportunities for investment expansion and strengthening their financial position. Minor fluctuations in individual years did not change the overall upward trajectory.

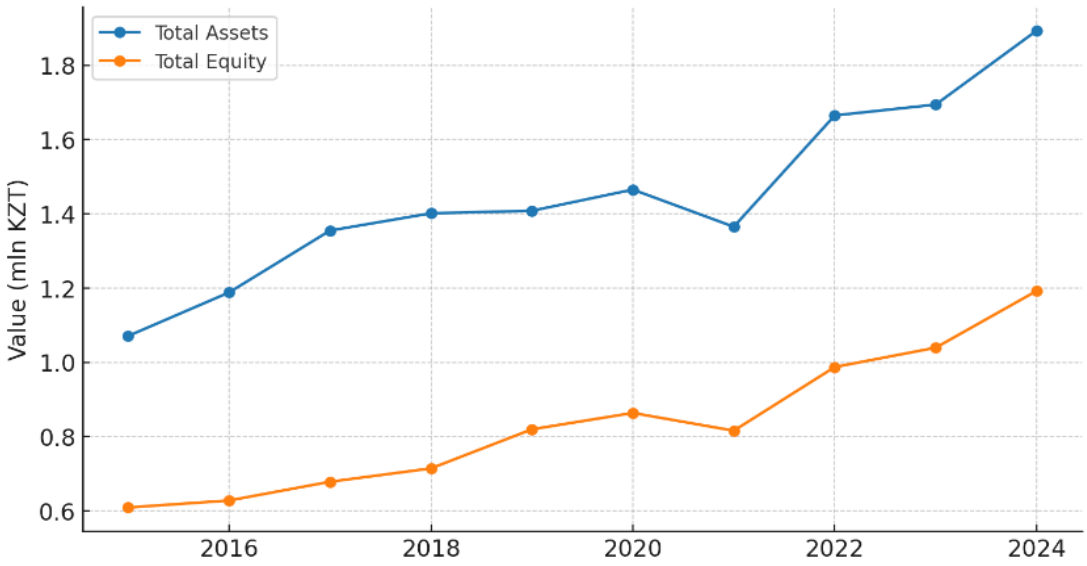

FIGURE 1. Company Scale for 2015-2024

Note: compiled by the authors according to calculations

In 2015–2024, long-term assets and fixed assets showed an upward trend with occasional periods of sharp increases. Long-term assets grew smoothly, without strong jumps; therefore, companies steadily invested in development in large projects, modernization, and infrastructure. Thus, structural changes in the financial base of the oil and gas sector are presented in Figure 2 based on the dynamics of retained earnings, property, plant, and equipment, and long-term assets.

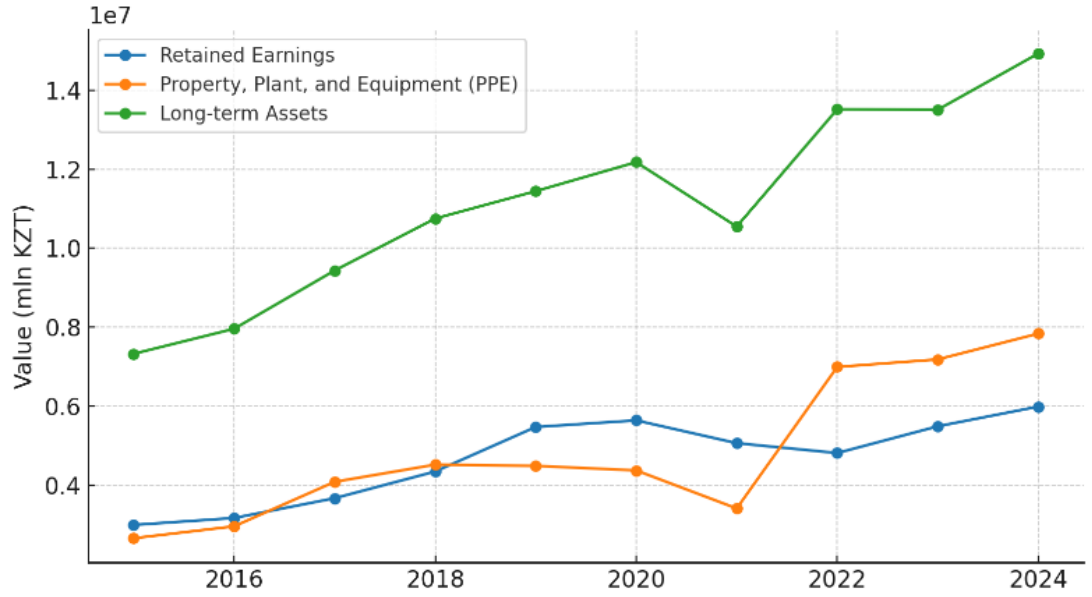

FIGURE 2. Sources and Structure for 2015-2024

Note: compiled by the authors according to calculations

In 2015-2024, long-term assets and fixed assets showed an upward trend with occasional periods of sharp increases. Long-term assets grew smoothly, without strong jumps; therefore, companies steadily invested in development in large projects, modernization, and infrastructure. Fixed assets (equipment, plants, transport facilities) behaved differently: sometimes they fell, sometimes they grew sharply. Particularly noticeable growth began after 2021. This can be interpreted as a result of new significant investments specifically in production capacities (for example, equipment upgrades, construction, or expansion of facilities). Retained earnings showed a gradual increase until 2020, after which there was a decline, followed by a recovery in 2022–2024. The combined dynamics suggest that strategic stability was primarily established through long-term investments, while profit was influenced by market conditions.

Figure 3 illustrates the dynamics of liquidity indicators, including current assets and cash equivalents.

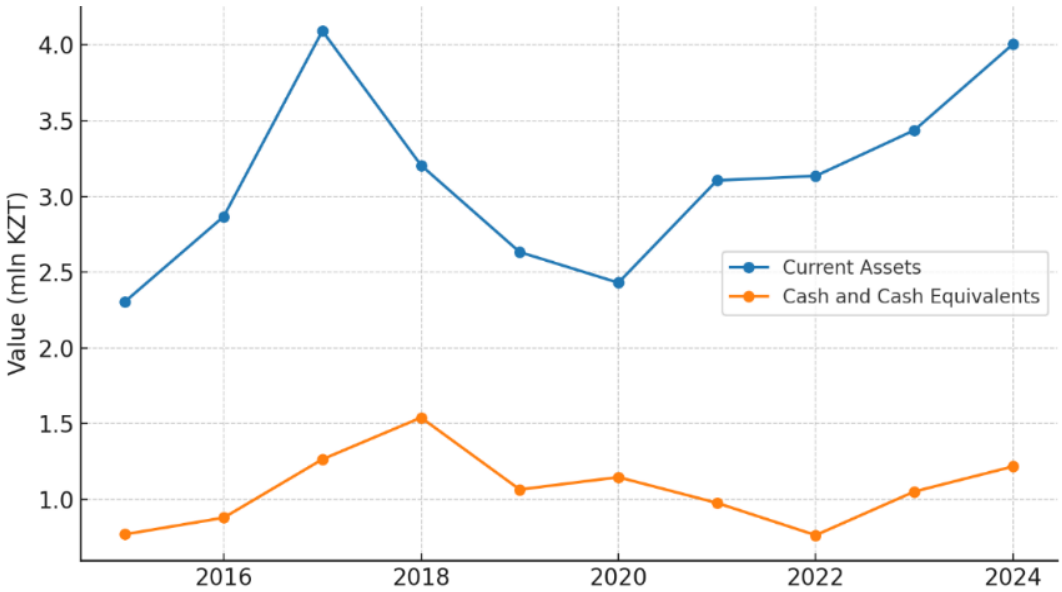

FIGURE 3. Liquidity for 2015-2024

Note: compiled by the authors according to calculations

In 2015–2024, liquid resources developed unevenly: short-term assets and cash in the oil and gas sector changed unstably, without a clear and sustainable growth trend. Current assets increased over the period, but the growth was accompanied by sharp fluctuations, with significant increases in 2017 and 2024, followed by declines in between. Cash and cash equivalents increased until 2018, after which they declined; the recovery was only partial and did not reach previous levels. Such fluctuations show that liquid resources are not the primary source of stability for oil and gas companies. Unlike long-term assets, which ensure stable development, short-term resources behave too inconsistently to play a strategic role.

The fact that the assets and capital of oil and gas companies have grown indicates that the financial foundation of the sector, which remains systemically essential to Kazakhstan's economy, has strengthened. The increase in long-term investments and the use of profits for reinvestment indicate that sustainability and growth depend on capital-intensive investments, rather than short-term cash flows. For the economy, this signals that strategic development is only possible with the concentration of resources in long-term

projects that form the production base, infrastructure, and innovative areas.

On the contrary, the instability of current assets and cash demonstrates their limited significance for macroeconomic sustainability. Short-term liquidity can support operational activities, but it does not provide a long-term effect for the economy.

Thus, for Kazakhstan, the results of the graphs indicate that the key source of sustainability for the national economy remains long-term assets and reinvested profits from oil and gas companies. At the same time, short-term resources play only a supporting role.

The identified differences in the dynamics of long-term and short-term indicators necessitate statistical verification of their relationships, which requires conducting correlation and regression analysis.

In Table 2, there are results for the correlation analysis.

TABLE 2. Correlation Matrix

Predictor	Test	TA	RE	TE	PPE	LA	CA
TA	Pearson's r						
	df						
	p-value						
RE	Pearson's r	0.809**					
	df	8					
	p-value	0.005					
TE	Pearson's r	0.966***	0.845**				
	df	8	8				
	p-value	<.001	0.002				
PPE	Pearson's r	0.966***	0.689*	0.930***			
	df	8	8	8			
	p-value	<.001	0.028	<.001			
LA	Pearson's r	0.975***	0.894***	0.961***	0.929***		
	df	8	8	8	8		
	p-value	<.001	<.001	<.001	<.001		
CA	Pearson's r	0.575	0.190	0.430	0.543	0.410	
	df	8	8	8	8	8	
	p-value	0.082	0.599	0.215	0.104	0.239	
CCE	Pearson's r	0.241	0.265	0.064	0.140	0.218	0.456
	df	8	8	8	8	8	8
	p-value	0.502	0.460	0.860	0.699	0.546	0.185
* p < .05, ** p < .01, *** p < .001							

Note: compiled by the authors according to calculations

The correlation analysis was systematised according to the conventional scale, where coefficients between 0.90 and 1.00 are considered very strong, 0.70-0.89 are strong, 0.40-0.69 are moderate, 0.10-0.39 are weak, and values below 0.10 are negligible. There is a cluster of strong relationships between long-term assets, fixed assets, capital, and profit, which reflects the structural interdependence of capital-intensive indicators and their joint influence on the scale of activity. Moderate, but statistically unconfirmed relationships were revealed for current assets; such dependencies are considered controversial. Weak and statistically insignificant relationships with key indicators were obtained for cash and cash equivalents. The correlation analysis confirmed the priority of long-term investments in moderating the financial stability of oil and gas companies in Kazakhstan.

Correlation analysis revealed that long-term and fixed assets have a significant influence on the company's scale and capital amount. In the

financial statements of oil and gas companies in Kazakhstan, the indicators of long-term assets and fixed assets serve as an indicator of the scale of capital investments in development. The growth of these reporting items is recorded as a result of investments in the modernization of production equipment, infrastructure development, processing, and environmental projects. The dynamics of long-term assets and fixed assets are considered as a reflection of the investment policy focused either on long-term growth, including ESG areas, or on the priority of production and short-term profit. A significant portion of these investments is related to projects aimed at reducing the carbon footprint, implementing technologies for cleaning emissions, recycling waste, and rational use of resources. When oil and gas companies in Kazakhstan invest in environmental projects (treatment facilities, emission reduction technologies, waste disposal) and modernization of production facilities, these expenses are recorded as long-term assets and fixed assets. Such investments do not represent current costs, but investments in assets that increase the value of the company and are reflected in the financial statements. Thus, the structure of capital investments allows us to determine the moment when the company prioritizes not production and short-term profits, but ensuring long-term sustainability based on reducing environmental and social risks, strengthening investor confidence, and maintaining business stability. Consequently, an increase in the share of environmentally oriented and infrastructure investments in assets contributes to the long-term growth of the sustainable financial results. The presence of significant correlations between long-term assets and key economic indicators confirms the strategic importance of these investments in the context of the ESG approach, focused on long-term efficiency and the minimization of environmental and social risks.

The results for hypothesis H3 indicate a high correlation between retained earnings and capital growth. For the oil and gas sector of Kazakhstan, this means that financial sustainability is primarily determined by the ability to accumulate internal resources and direct them to long-term projects, including environmental and social programs.

The absence of statistically significant relationships for hypothesis H2 supported that short-term assets and cash do not have a significant impact on sustainability indicators. Therefore, there is a limited role of liquid assets in ESG strategies for oil and gas companies in Kazakhstan, where priority is given to long-term investments in production and environmental projects. Thus, the correlation analysis confirms hypotheses H1, H2, and H3.

The results of the fitness of all models are in Table 3.

TABLE 3. Model Fit Measures

Model	R	R^2
Hypothesis 1	0.988	0.976
Hypothesis 2	0.276	0.0762
Hypothesis 3	0.845	0.714
*Models estimated using a sample size of N=10		

Note: compiled by the authors according to calculations

The obtained results showed that the model for Hypothesis 1 had an R^2 of 0.976, meaning that selected predictors explained 97.6% of the variation in total assets. The model for Hypothesis 2 had an R^2 of 0.076, meaning that only 7.6% of the variation in retained earnings was explained by selected predictors. Thus, results of the correlation analysis of the limited role of short-term resources in financial sustainability. The model for Hypothesis 3 had an R^2 of 0.714, meaning that 71.4% of the variation in total equity was explained by selected predictors. The overall significance of the models was assessed using the omnibus ANOVA test, with the results presented in Table 4.

TABLE 4. Omnibus ANOVA Test

Model	Predictor	Sum of Squares	df	Mean Square	F	p
Hypothesis 1	LA	2.34e+12	1	2.34e+12	13.01	0.009
	PPE	1.40e+12	1	1.40e+12	7.79	0.027
	Residuals	1.26e+12	7	1.80e+11	-	-
Hypothesis 2	CA	6.29e+10	1	6.29e+10	0.0460	0.836
	CCE	4.15e+11	1	4.15e+11	0.3034	0.599
	Residuals	9.57e+12	7	1.37e+12	-	-
Hypothesis 3	RE	2.34e+13	1	2.34e+13	20.0	0.002
	Residuals	9.36e+12	8	1.17e+12	--	
*Type 3 sum of squares						

Note: compiled by the authors according to calculations

The results confirmed the significance of long-term assets and fixed assets in the first model, which corresponds to hypothesis H1, and the p-values for both predictors were below 0.05. Hypothesis H2 was also confirmed, as the results of the second model predictors did not show statistical significance. Therefore, current assets and cash or cash equivalents have a limited or insignificant impact on retained earnings. In the third model, retained earnings demonstrated high statistical significance as a factor in the growth of total capital, which confirms hypothesis H3. Thus, long-term investments and retained earnings determine the development of assets and capital, while short-term resources have no effect.

The regression coefficients for each model, including estimates, standard errors, t-statistics, and significance levels, are presented in Table 5.

TABLE 5. Model coefficients

Model	Predictor	Estimate	SE	t	p
Hypothesis 1	Intercept	5.44e+6	887134.836	6.14	<.001
	LA	0.560	0.155	3.61	0.009
	PPE	0.581	0.208	2.79	0.027
Hypothesis 2	Intercept	3.10e+6	2.25e+6	1.381	0.210
	CA	0.156	0.726	0.214	0.836
	CCE	1.007	1.828	0.551	0.599
Hypothesis 3	Intercept	1.35e+6	1.60e+6	0.840	0.425
	RE	1.50	0.336	4.469	0.002

Note: compiled by the authors according to calculations

Estimation of regression coefficients for hypothesis 1 showed statistical significance of long-term assets and fixed assets. Both indicators made a positive contribution to the growth of total assets, which confirms their key role in the model. In the model for hypothesis 2, the statistical significance of current assets and cash was not revealed. Their coefficients did not affect retained earnings, which indicates a limited role of short-term liquidity. According to hypothesis 3, the coefficient of retained earnings turned out to be significant, which confirmed its contribution to the growth of total capital. The obtained results completely coincided with the conclusions of the correlation analysis and verification through ANOVA, which strengthens the reliability of the interpretation.

In implementing ESG, oil and gas companies in Kazakhstan focus not on short-term expenses (for example, working capital or cash), but on significant long-term investments. We are talking about investments in fixed assets (equipment, plants, pipelines) and intangible assets (technology, licenses, software, know-how). They form a production base, ensuring the extraction, processing, and transportation of oil and gas at a modern level.

They create conditions for achieving ESG goals, utilising new technologies, and developing infrastructure that enable the reduction of carbon emissions, more efficient energy use, safer waste disposal, improved labour safety, and enhanced social responsibility standards. In other words, ESG in the oil and gas sector of Kazakhstan is materialized primarily through long-term capital investments, and not through current financial flows. Long-term assets become an indicator of the strategic choice of companies in favor of sustainable development, while short-term assets and cash do not reflect this orientation.

Accumulated retained earnings play a special role in the implementation of ESG strategies, since it is internal sources that allow financing environmental programs, labor protection, and corporate governance projects without critical dependence on external loans. For oil and gas companies in Kazakhstan, the decisive factor for sustainability is not just the availability of free money in the accounts, but how retained earnings are used. When profits are not distributed as dividends, but are sent back to the company, reinvestment occurs. Such funds are spent on long-term projects: construction or modernization of treatment facilities, implementation of energy-efficient technologies, labor protection, or social support programs. Thus, the sustainability of companies is formed due to the quality of investments of accumulated resources, and not only due to the volume of current assets.

ESG in oil and gas companies of Kazakhstan is expressed in the fact that sustainable development is not built on short-term assets or cash liquidity, but on two strategic financial elements. Long-term assets reflect capital investments in equipment modernization, environmental technologies, processing, and transport infrastructure. Internal accumulation of profit shows the ability of companies to reinvest accumulated funds in social and environmental projects. These two areas of financial policy are transformed into mechanisms through which ESG does not remain a declaration, but is enshrined in the development strategy of companies.

Collinearity diagnostics were performed to evaluate the stability of the regression estimates, and the results are presented in Table 6.

TABLE 6. Collinearity statistics

Model	Predictor	VIF	Tolerance
Hypothesis 1	LA	7.35	0.136
	PPE	7.35	0.136
Hypothesis 2	CA	1.26	0.792
	CCE	1.26	0.792
Hypothesis 3	RE	1.00	1.00

Note: compiled by the authors according to calculations

The results of the multicollinearity test showed that in the model, according to hypothesis 1, the VIF values for long-term assets and fixed assets were 7.35 with a tolerance level of 0.136. Such indicators indicate the presence of moderate multicollinearity, which can affect the stability of the coefficient estimates, but remains within the acceptable level (VIF < 10). In the model according to hypothesis 2, the VIF values for current assets and cash were low (1.26 with a tolerance of 0.792), which indicates the absence of a multicollinearity problem. For hypothesis 3, the VIF indicator was 1.00 with a tolerance of 1.00, which reflects the complete lack of interdependence between the predictor and other variables.

The conducted correlation and regression analysis allowed us to identify differences in the role of long-term and short-term assets in the financial stability of oil and gas companies in Kazakhstan. There was a confirmed close relationship between the total volume of assets, long-term investments, and capital, which

indicates a structural dependence of strategic development on capital-intensive investments. At the same time, current assets and cash did not demonstrate a statistically significant relationship with retained earnings, which emphasized the limited role of short-term resources.

The results of ANOVA and the assessment of regression coefficients showed the importance of long-term assets and fixed assets in the formation of the total volume of assets, as well as the importance of retained earnings in increasing capital. The multicollinearity test confirmed the acceptable level of relationships between predictors, which ensures the stability of the models.

Thus, the key factors in the sustainable development of oil and gas companies are long-term assets and internal accumulation of profit. They provide the opportunity to integrate environmental and social priorities into corporate strategy, while short-term resources do not have a significant impact on strategic sustainability.

The results of the analysis based on long-term assets variables (LA, PPE) and retained earnings (RE) directly reflect key ESG indicators. The growth of investments in fixed assets and infrastructure modernization corresponds to the goals of SDG 9 "Industry, Innovation and Infrastructure" and SDG 13 "Climate Action". The accumulation and reinvestment of profits is associated with internal financing of environmental and social projects, which corresponds to SDG 7 "Affordable and Clean Energy" and SDG 12 "Responsible Consumption and Production". At the same time, the results for current assets and cash (CA, CCE) showed statistical insignificance, which confirms their limited role in strategic sustainability.

Similar and different trends can be observed in international practice. In Western European countries, where corporate law is focused on the interests of stakeholders, external verification of reporting according to GRI and ISAE 3000 standards strengthens the connection between financial performance and ESG indicators (Kolk & Perego, 2010; Sohn et al., 2013). In resource-dependent economies with weak institutions, verification performs a compensating function (Juravle & Lewis, 2008). In the oil and gas sector of different countries, reporting remains incomparable: consolidation boundaries, interpretation of emissions according to Scope 1–3, and the level of GRI compliance differ (Cardoni et al., 2019). In contrast, Kazakhstani companies demonstrate a high dependence on the structure of assets and internal savings. This specificity is associated with the high capital intensity of the sector and the limited role of short-term liquidity.

The patterns identified in the analysis indicate the need to integrate ESG indicators into mandatory financial reporting forms. If, in addition to the indicators used, such indicators as greenhouse gas emissions, specific energy consumption costs, and labor protection costs are included, this will allow financial results to be linked to environmental and social priorities. Such a practice is already being implemented in the European Union within the framework of the CSRD (Corporate Sustainability Reporting Directive) and ESRS standards, as well as in the international IFRS S1/S2 standards developed by the ISSB (International Sustainability Standards Board), which oblige companies to disclose climate and social indicators along with financial ones. In this case, public policy will not only change reporting standards but will also lead to a fundamental redistribution of investments in favor of sustainable projects.

Practical steps include developing a national ESG reporting standard for the oil and gas industry, mandatory disclosure of environmental and social indicators along with financial ones, and the introduction of an independent verification system. In addition, incentives are required for companies that direct retained earnings to long-term environmental and social projects. These measures will help synchronize corporate strategies with national priorities and international standards of sustainable development.

5. CONCLUSIONS

The objective of the study was to identify the impact of the asset and profit structure on the strategic sustainability of oil and gas companies in Kazakhstan in the context of the ESG approach. To achieve this goal, three hypotheses were formulated and tested, reflecting the role of long-term investments, short-term resources, and internal accumulation of profit in financial development.

The first hypothesis confirmed the importance of long-term assets and fixed assets for the formation of the total volume of assets. The results showed that the strategic sustainability of oil and gas companies is largely based on capital-intensive investments that ensure the modernization of the production base and create conditions for the integration of environmental and social priorities. As a practical recommendation, the emphasis should be on expanding investment programs in the modernization of equipment and infrastructure, including projects with an environmental focus.

The second hypothesis was not confirmed, indicating a limited role of current assets and cash in ensuring long-term sustainability. The presence of liquid resources does not guarantee strategic development and does not form the basis for ESG-oriented projects. In management practice, this circumstance requires an adjustment of priorities: attention should shift from short-term liquidity to long-term investment instruments that ensure sustainable growth.

The third hypothesis confirmed the importance of retained earnings in capital formation. The financial stability of companies depends on the ability to accumulate internal resources and direct them to projects that have an environmental and social impact. A practical recommendation is to develop a profit reinvestment policy, which will reduce dependence on external financing and strengthen the integration of ESG principles into corporate strategy.

This study has several limitations. The analysis covered only one company, JSC KazMunayGas, over ten years. In addition, the assessment was limited to aggregated financial variables without separate ESG subindexes. These constraints suggest directions for further research.

Future research should include other oil and gas companies in Kazakhstan, and also integrate disaggregated ESG indicators. Such an approach enables a more precise assessment of how financial structure influences sustainability in resource-dependent economies.

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