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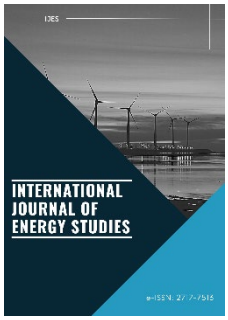

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Financial analysis of international oil companies and the effect of foreign direct investment in the northern region of Iraq

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Highlights

- The impact of foreign direct investment on the economic development is investigated
- A random effects panel estimation analysis is employed
- Oil prices strongly impact company revenues
- Interest coverage and equity boost revenue; working capital reduces it

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ABSTRACT

This paper investigates the impact of Foreign Direct Investment (FDI) on the economic development in the Northern Region of Iraq, with a focus on the financial performance of international oil companies (IOCs) operating within the region. The study analyzes nine key financial ratios for IOCs over the period from 2011 to 2019: Return on Assets (ROA), Return on Equity (ROE), Return on Invested Capital (ROIC), Interest Coverage Ratio, Debt/Equity Ratio, Gross Profit Margin (GPM), Current Ratio, Quick Ratio, and Working Capital. The results reveal that ExxonMobil consistently outperformed its peers in ROA, ROE, ROIC, Interest Coverage Ratio, and Debt/Equity Ratio, while Genel Energy showed superior performance in the Current and Quick ratios. Additionally, Rosneft and Gazprom exhibited leading performance in Gross Profit Margin and Working Capital, respectively. A random effects panel estimation analysis was employed to explore the relationship between financial ratios and company revenues, uncovering a significant influence of crude oil prices on the financial outcomes of IOCs. The findings underscore the importance of optimizing financial management, diversifying revenue streams, establishing a strong policy framework to attract FDI, and investing in research and development. Strengthening partnerships with international oil companies emerges as a critical strategy for fostering sustainable economic growth and securing the long-term prosperity of the Northern Region of Iraq's oil sector.

Keywords: International oil companies, Financial analyses, Foreign direct investment, Economic development, Iraq

1. INTRODUCTION

Foreign Direct Investment (FDI) has emerged as a significant driver of economic development in both developed and developing countries. Essentially, FDI involves the establishment and expansion of businesses operating across national borders and significantly influences global economic patterns, reshaping local economies [1, 2]. In resource-rich sectors such as oil and gas, FDI plays a crucial role in facilitating development and modernization. At the same time, oil-dependent regions, especially in developing countries, are highly vulnerable to fluctuations in international oil prices. Rising oil prices tend to have a stronger and more immediate impact on income generation than falling prices, creating volatility that complicates long-term investment planning [3, 4].

Financial analysis serves as an essential tool for evaluating the performance and stability of businesses, projects, budgets, and other finance-related factors. This assessment typically focuses on a company's income statement, balance sheet, and cash flow statement to assess stability, solvency, profitability, and liquidity [5, 6, 7, 8]. Moreover, these ratios are indispensable in this process, providing a concise yet comprehensive means of evaluating an entity's financial health and facilitating informed decision-making across various domains such as product pricing, profit planning, financial structuring, and dividend policy [9, 10]. These ratios not only provide insights into the current and past performance of a company but also serve as a tool for planning and controlling future activities. For example, metrics such as asset profitability and net profit margins are used as indicators to evaluate financial performance [11].

In developing economies, capital flight (the informal or rapid movement of domestic capital to more stable foreign markets) poses a major challenge. This outflow reduces domestic investment capacity, erodes asset values, and undermines long-term economic growth [12]. Consequently, policymakers must design strategies that attract and retain foreign capital while mitigating the risks associated with capital flight [13].

The Northern Region of Iraq offers a unique example of resource abundance coexisting with institutional fragility. The region has attracted significant attention from international oil companies (IOCs) since 2003. However, political instability, governance constraints, and market volatility continue to hinder the region's ability to fully leverage foreign direct investment for

sustainable development. In this context, understanding how financial structures, market conditions, and foreign investment interact is crucial to ensuring long-term economic stability.

Although there is an extensive literature examining the relationship between foreign direct investment (FDI) and economic growth, existing studies have not reached a definitive conclusion on how FDI affects firm-level performance and sectoral revenue. Classical studies emphasize technology transfer, productivity spillovers, and capital accumulation as key mechanisms (14; 15). More recent research, however, emphasizes institutional quality, political stability, and sectoral characteristics as determinants of FDI effectiveness. Despite this extensive literature, relatively limited attention has been paid to how these mechanisms operate in oil-dependent and politically fragile environments such as the Northern Region of Iraq. This study fills this gap by combining insights from the FDI growth literature with firm-level financial analysis and examines how financial structures and external conditions influence the impact of FDI on firm revenues. Foreign direct investment theory suggests that foreign investment contributes to economic performance by facilitating technology diffusion, human capital development, and improved management practices (16; 17). However, in resource-rich economies, these benefits often depend on overcoming structural weaknesses associated with the resource curse, the Dutch disease, and weak institutions (18). Therefore, the effectiveness of foreign direct investment depends largely on the quality of governance, macroeconomic stability, and domestic absorptive capacity. Therefore, firm-level financial characteristics such as liquidity, leverage, and capital structure play a significant role in determining how foreign direct investment translates into measurable economic outcomes.

Furthermore, empirical evidence suggests that the positive effects of foreign direct investment depend on complementary factors such as financial development, sectoral efficiency, and institutional capacity (19; 20). In capital-intensive sectors such as oil and gas, financial ratios serve as important indicators of operational efficiency, investment capability, and overall performance. By incorporating these indicators into its empirical framework, this study provides a more comprehensive understanding of how FDI interacts with financial structures in resource-rich economies. The primary objective of this study is to investigate the role of FDI in shaping the economic development of Northern Iraq by examining the relationship between key financial ratios and firm revenues. By analyzing the financial performance of FDI and examining the strategic factors influencing investment decisions, the study provides evidence-based insights and

actionable policy recommendations aimed at increasing FDI inflows, strengthening financial structures, and promoting sustainable economic development in the region. Based on these objectives, the study proposes the following hypotheses:

H1: Oil prices positively affect the revenues of oil companies in the Northern Region of Iraq [21].

H2: Working capital, when efficiently utilized, positively affects revenue; however, excessive levels may exert negative effects. [22, 23].

H3: Higher interest coverage ratios positively influence revenue by improving financing stability [24, 25].

H4: Inventory levels have a positive effect on revenue, consistent with production and sales smoothing theory [26].

H5: Current liabilities may positively influence revenue due to the supportive role of trade credit in emerging markets [27].

H6: Stockholders' equity positively affects revenue through strengthened capital structure [28, 29].

To investigate these hypotheses, this study employs nine key financial ratios: Return on Assets (ROA), Return on Equity (ROE), Return on Invested Capital (ROIC), Gross Profit Margin (GPM), Current Ratio, Quick Ratio, Working Capital, Interest Coverage Ratio, and Debt/Equity Ratio. By analyzing the financial performance of IOCs operating in the Northern Region of Iraq and exploring the relationship between these ratios and oil prices, this study aims to provide a comprehensive understanding of the financial health of IOCs in the region. The valuable insights derived from this analysis will provide critical guidance for policymakers and industry stakeholders, helping to optimize FDI strategies and promote sustainable economic growth in the Northern Region of Iraq. This study contributes to the literature by providing firm-level evidence on how financial structure and oil price dynamics shape revenue performance in a politically fragile, resource-dependent region.

2. MATERIAL AND METHODS

2.1. Data Collection and Analysis

This study employed a comprehensive approach to evaluate the financial performance and revenue determinants of IOCs operating in the Northern Region of Iraq. Financial data covering the period 2010-2019 were collected from publicly available financial reports and international databases. The dataset includes nine key financial ratios: Return on Assets (ROA), Return on Equity (ROE),

Return on Invested Capital (ROIC), Gross Profit Margin (GPM), Current Ratio, Quick Ratio, Working Capital, Interest Coverage Ratio, and Debt/Equity Ratio. All monetary values were deflated using the GDP deflator to ensure comparability across years by removing the effects of inflation. All monetary variables, including revenue, working capital, inventories, current liabilities, and stockholders' equity, are expressed in real terms (million USD) and entered into the model in levels, following standard practice in firm-level panel data analysis.

Preliminary ratio calculations and descriptive statistics were conducted using Microsoft Excel, while advanced statistical tests and diagnostic analyses were carried out using SPSS. For panel data estimation, Gretl software was employed due to its strengths in handling unbalanced and short-panel datasets and its built-in diagnostic tools. This multi-stage analytical process provided a robust basis for understanding the financial structure and performance dynamics of IOCs in the region.

A rigorous data cleaning procedure was applied before conducting the analysis. This process included handling missing values, standardizing variable formats, identifying and adjusting outliers, and performing normalization or scaling where necessary. These steps ensured the reliability, validity, and consistency of the dataset, improving the accuracy and interpretability of the regression results.

2.2. Methodological Approach

The methodological framework of this study was grounded in both quantitative and qualitative research methods to provide a comprehensive view of the factors influencing FDI in oil sector. A detailed literature review was conducted to situate the study within the broader academic discourse, allowing for a more nuanced interpretation of the results. Key studies informed the research context. For instance, Dayanandan and Donker [30] analyzed the relationship between crude oil prices and financial performance of IOCs and found a positive impact on ROE in North America, while Mohanty et al. [31] found a negative relationship between crude oil prices and the financial performance of oil and gas companies in Central and Eastern Europe. Similarly, Raičević et al. [32] highlighted significant predictors of FDI movement in Serbia, such as exchange rates, import/export activities, and state expenditures, and Manikom and Guillermet [33] explored how financial crises affect financial ratios, revealing variations based on company operational years.

These studies provided key insights into the complex interactions between FDI, financial performance, and external economic factors.

This study aimed to analyze factors attracting IOCs to invest in the Northern Region of Iraq and to investigate the broader effects of FDI on the region's economic development. The methodological approach combined quantitative analysis, literature review, and qualitative research to provide nuanced information for policy and strategic decision-making. The combination of these methods aimed to deliver comprehensive insights for policymakers and business strategists.

One of the key methodological concerns in empirical FDI studies is the presence of endogeneity, particularly simultaneity and omitted variable bias. As emphasized by Wooldridge [34], simultaneity is a major source of biased and inconsistent estimates in panel data models, especially when financial indicators and firm performance evolve jointly over time. Simultaneity arises because financial indicators such as working capital, equity, and interest coverage may influence company revenues, while at the same time firms with higher revenue potential tend to attract more investment, including FDI. This two-way causality can bias coefficient estimates if not addressed appropriately. Omitted variable bias may occur if unobserved factors (such as institutional quality, political stability, regional security conditions, or global risk appetite) affect both financial performance and FDI inflows. According to Alfaro et al. [20] and Hermes & Lensink [19], institutional quality and financial development jointly shape the extent to which FDI contributes to firm-level outcomes, meaning that excluding such factors risks attributing their effects to observable financial ratios.

In this study, although the primary empirical specification employs a panel data random effects model, several features of the applied estimation strategy help mitigate these endogeneity concerns. First, the use of panel data itself allows the model to control for unobservable firm-specific heterogeneity, which captures time-invariant factors that may otherwise bias the estimates [35]. Second, diagnostic tests such as the Breusch–Pagan and Hausman tests were conducted to ensure that the model appropriately accounts for cross-sectional variation and that regressors are not correlated with individual effects [36]. Third, the inclusion of multiple financial controls reduces the risk of omitted variable bias by capturing key channels through which firm-level conditions influence revenue.

While System Generalized Method of Moments (System GMM) is a more advanced method specifically designed to address simultaneity and omitted variables in dynamic panels, its application requires longer time series and larger sample sizes. System GMM, developed by Arellano & Bover [37] and Blundell & Bond [38], is effective for mitigating endogeneity using internal instruments, but Roodman [39] warns that GMM becomes unreliable in short panels, leading to weak instruments and overfitting. Due to the short panel dimension and limited number of firms in the dataset, System GMM was not feasible. Instead, the study relies on robust panel methods and diagnostic evidence to minimize endogeneity concerns within the constraints of the available data.

2.2.1. Financial ratios

In this study, nine most important financial ratios have been selected and will be analyzed [5, 6, 7, 8, 9].

ROA measures how efficiently a company uses its assets to generate profit. Higher ROA means better returns, ROA indicates the ability to turn investment into profit.

$$\text{ROA} = \left(\frac{\text{Net Income}}{\text{Total Assets}}\right)\text{X100} \quad (1)$$

ROE indicates profitability relative to shareholders' equity.

$$\text{ROE} = \left(\frac{\text{Net Income}}{\text{Stockholder's Equity}}\right)\text{X100} \quad (2)$$

ROIC ratio evaluates operating profit relative to the long-term capital invested. It reflects how effectively the company utilizes investors' capital to generate earnings.

$$\text{ROIC} = \left(\frac{\text{Net Operation Profit After Tax}}{\text{Invested Capital}}\right)\text{X100} \quad (3)$$

GPM ratio indicates the amount of gross profit earned as a percentage of the revenue generated during a specific period.

$$\text{Gross Profit Margin} = \left(\frac{\text{Gross Profit}}{\text{Sales Revenue}}\right)\text{X100} \quad (4)$$

Current Ratio indicates the company's ability to meet short-term liabilities with short-term assets.

$$\text{Current Ratio} = \left(\frac{\text{Current Assets}}{\text{Current Liabilities}}\right) \text{X100} \quad (5)$$

Quick ratio (Acid test ratio) measures liquidity, excluding inventory.

$$\text{Quick Ratio} = \left(\frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}\right) \text{X100} \quad (6)$$

Working Capital ratio represents the ability to meet day-to-day operational expenses and serves as an indicator of how efficiently it manages its inventory, accounts receivable, and accounts payable.

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities} \quad (7)$$

The Interest Coverage Ratio assesses the ability to cover interest payments with operating profit.

$$\text{Interest Coverage Ratio} = \left(\frac{\text{Pretax Earning} + \text{Interest}}{\text{Interest}}\right) \text{X100} \quad (8)$$

Debt and Equity Ratio evaluates the proportion of debt financing relative to equity.

$$\text{D/E Ratio} = \left(\frac{\text{Total Debt (short term debt + long term debt + fixed payment obligations)}}{\text{Shareholders' Equity}}\right) \text{X100} \quad (10)$$

2.2.2. Regression analysis

Panel data, also known as longitudinal data, combines cross-sectional and time-series dimensions by observing multiple entities over time. This approach has become progressively common in macroeconomic analysis as it allows for a more comprehensive analysis of data. By capturing both the variations within a single cross-section and across time, panel data analysis enhances the accuracy and reliability of statistical estimates [34].

The dataset used in this study consists of observations from 10 entities over the period 2011-2019 sourced from a Survey. Each entity is consistently observed across all years, resulting in a balanced panel dataset. The use of panel data is particularly advantageous here, as it accounts for

heterogeneity among the entities by incorporating individual-specific variables. The panel data model utilized in this study is specified as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} \ldots \beta_n X_{nit} + u_{it} \quad (11)$$

Where:

Y_{it} is the dependent variable for entity i at time t.

X_{it} are the independent variables for entity i at time t.

B_0 is the intercept term.

$B_1, B_2, \ldots, B_n$ are the coefficients of the independent variables.

u_{it} is the error term, capturing the unobserved factors that affect the dependent variable.

This study employs the Random Effects Model (REM) for estimating the panel data. The REM is advantageous in this context as it assumes that individual-specific effects are random and uncorrelated with the independent variables. Unlike the Fixed Effects Model (FEM), which removes time-invariant variables, the REM allows for their inclusion as predictors. This is particularly relevant in macroeconomic studies where time-invariant variables, such as geographic location or industry type, can be significant factors. The model is expressed as:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} \ldots \beta_n X_{nit} + u_{it} + \epsilon_i \quad (12)$$

where ϵ_i is the random effect associated with entity *i*. The individual-specific effect μi is assumed to be uncorrelated with the explanatory variables, i.e., $Cov(X_{it},\mu_i)=0$. This assumption is critical for the consistency and unbiasedness of the REM estimators and distinguishes REM from FEM.

To determine the most appropriate model for the data, the Hausman test is employed. This test helps in deciding between the FEM and REM by assessing whether the individual effects are correlated with the regressors. A suite of diagnostic tests is conducted to ensure the validity and robustness of the model. These include tests for heteroskedasticity, autocorrelation, and cross-sectional dependence, all of which assess potential issues in the error terms. The REM is estimated using generalized Ordinary Least Squares to handle any potential issues identified by these tests.

The analysis is conducted using the Gretl software, which offers comprehensive tools for estimating panel data models and performing diagnostic tests. Through these rigorous methods, the study aims to ensure the reliability of its findings and the robustness of the chosen model.

To analyze the relationship between oil prices and company revenue, the following model was employed:

$$Company's\ Revenue_t = \beta_0 + \beta_1\ Oil\ Price_t + u_t \quad (13)$$

For the analysis of the effects of financial ratios on company revenue, the following Ordinary Least Square regression was applied:

$$Company's\ Revenue_{it} = \beta_0 + \beta_1\ Working\ capital_{it} + \beta_2\ Interest\ coverage_{it} + \beta_3\ Inventories_{it} + \beta_4\ Current\ liabilities_{it} + \beta_5\ Stockholder's\ equity_{it} + u_{it} + \epsilon_i \quad (14)$$

Variables used in the models described in Table 1 and Table 3.

3. RESULTS AND DISCUSSION

3.1. Financial Ratios of International Oil Companies

In this section, we evaluate the nine most important financial ratios for international oil companies: ROA, ROE, ROIC, GPM, Current ratio, Quick ratio, Working capital, Interest coverage ratio, and Debt/Equity ratio. The companies analyzed include Gazprom, Rosneft, Repsol, Taqa, OPHKL, Chevron, DNO, Genel Energy, GKPI, Danagas, Addax Pet./Sinopec, and ExxonMobil.

3.1.1. Profitability ratios

ROA: Table 1 presents the average ratios for each company. ExxonMobil leads with a robust ROA of 7.97, followed by Addax Petroleum and Gazprom with 7.66 and 7.20, respectively. In contrast, OPHKL records the lowest ROA at -11.82, indicating a negative value. Genel Energy, GKPI, and Taqa also exhibit negative ROA, suggesting challenges in generating profits from their assets. Addressing these issues is crucial for improving operational efficiency and ensuring sustainable performance.

ROE: The ROE ratio comparison reveals ExxonMobil as the top performer with a ratio of 16.04. Rosneft and Addax Petroleum follow with 13.96 and 11.52, respectively. Conversely, Taqa records the lowest ROE at -75.58, alongside GKPI, OPHKL, and Genel Energy, which also show negative ROE. These negative values indicate that these companies are struggling to generate profits from the funds raised through equity capital.

ROIC: An ideal ROIC is ≥2. ExxonMobil again emerges as the top performer with a ROIC of 14.26, followed by Addax Petroleum and Chevron with 10.50 and 9.95, respectively. Taqa shows a low ROIC of 1.16, while OPHKL, Genel Energy, and GKPI report negative ROICs. Negative ROIC indicates these companies are unable to generate earnings from their invested capital, highlighting a need for strategic intervention.

3.1.2. Efficiency ratios

GPM: The inter-company comparison of GPM shows that Gazprom performs the best with a GPM of 58.97. Rosneft, Danagas, and DNO also perform well, while GKPI stands out with a negative GPM of -0.05. This negative GPM underscores the imperative for GKPI to improve its business operations for long-term viability and competitiveness.

3.1.3. Liquidity ratios

Current Ratio: The current ratio comparison shows that while all companies exhibit positive values, only a few meet the ideal ratio of ≥2. The top performers are Genel Energy (7.47), Danagas (3.98), and DNO (3.78). ExxonMobil records the lowest current ratio at 0.86, indicating a longer operational cycle for converting products to cash.

Quick Ratio: The quick ratio analysis reveals similar trends. The top performers are Genel Energy (7.36), Danagas (3.68), and DNO (3.04), while ExxonMobil has the lowest quick ratio of 0.59. A lower quick ratio suggests less efficiency in converting short-term assets to meet short-term liabilities.

3.1.4. Capital management

Working Capital: Gazprom leads with the highest working capital of $13,674.14 million, followed by Chevron and Repsol. However, Rosneft reports the lowest working capital at -$662.64

million, indicating potential financial strain. Adequate working capital management is crucial for maintaining financial stability.

Interest Coverage Ratio: ExxonMobil again excels with an interest coverage ratio of 123.91, indicating a strong ability to meet interest payments. In contrast, GKPI, OPHKL, and Genel Energy show negative interest coverage ratios, highlighting significant financial risks.

Debt/Equity Ratio: The Debt/Equity ratio analysis shows that Addax Petroleum and ExxonMobil have the most favorable ratios at 0.05 and 0.10, respectively, indicating efficient debt management. On the other hand, Taqa has the highest Debt/Equity ratio at 14.59, suggesting a need for significant improvement in managing debt and equity finance.

In summary, Gazprom, Rosneft, Chevron, and ExxonMobil demonstrate strong profitability and efficient utilization of resources. However, companies like Repsol, Taqa, and OPHKL show mixed performance across various financial metrics. The analysis highlights the importance of efficient financial management, particularly in areas like liquidity, capital management, and debt utilization, to ensure long-term sustainability and competitiveness in the market. We can also compare companies for various factors such as profitability, financial stability, liquidity, and efficiency. For profitability, Exxon Mobil demonstrates strong profitability across multiple metrics such as ROA, ROE, and ROIC. It also has a relatively high EPS and operating margin. For Financial Stability, Chevron and Exxon Mobil exhibit lower debt-to-assets ratios, indicating a healthier balance between debt and assets. They also have higher interest coverage ratios, suggesting their ability to comfortably meet interest payments. For Liquidity, Chevron has strong liquidity ratios, including current and quick ratios, indicating its ability to cover short-term obligations efficiently. For Efficiency, Exxon Mobil shows strong efficiency metrics, including ROIC and operating margin, indicating effective management of resources and costs.

Table 1. Average financial ratios of international oil companies over ten years (ratios in %, working capital in million USD)

Ratios	**Gazprom**	**Rosneft**	**Repsol**	**Taqa**	**OPHKL**	**Chevron**	**DNO**	**Genel Energy**	**GKPI**	**Danagas**	**Addax Pet. / Sinopec**	**Exxon Mobil**
ROA	7.20	6.10	1.81	-2.11	-11.82	6.47	4.83	-7.94	-5.49	2.17	7.66	**7.97**
ROE	10.85	13.96	4.76	-75.58	-15.75	11.17	8.27	-10.77	-16.04	3.07	11.52	**16.04**
ROIC	8.70	8.94	3.34	1.16	-13.61	9.95	7.59	-7.71	-4.29	2.96	10.50	**14.26**
GPM	24.57	**44.97**	21.40	12.64	34.89	29.45	41.52	40.28	-0.05	44.92	4.12	22.88
Current	1.72	1.29	1.29	1.09	1.30	1.34	3.78	**7.47**	3.34	3.98	1.16	0.86
Quick	0.97	0.89	0.90	0.74	1.00	0.96	3.04	**7.36**	2.83	3.68	0.63	0.59
Working capital	**13674.14**	-662.64	5071.60	205.65	27.13	10469.80	340.50	643.29	155.72	537.50	312.21	-8.33
Interest coverage	28.68	14.96	3.33	0.64	-25.96	72.13	3.13	-9.94	-22.76	2.87	47.21	**123.91**
Debt / Equity	0.20	0.56	0.44	**14.59**	0.17	0.16	0.57	0.26	0.69	0.15	0.05	0.10

3.2. Effect of Financial Factors and Oil Prices on Companies' Revenue

3.2.1. Effect of price on company's revenue

Simple linear regression was conducted to examine the relationship between oil prices and the revenue of several companies. Table 2 displays an R^2 value of 0.844, indicating that 84.4% of the variation in Gazprom's revenue can be explained by oil price. This high R^2 value suggests that predictions from the regression equation are fairly reliable. The slope coefficient for oil price was 898.26, suggesting that Gazprom's annual revenue increases by $898.26 for each additional unit increase in oil price. This significant relationship is supported by a p-value of 0.000. Overall, the results indicate a strong positive relationship between oil prices and revenue for most companies, particularly Chevron and Exxon Mobil. However, it's essential to consider other factors and conduct further analysis to fully understand the drivers of revenue for each company. These findings are consistent with Alquist and Kilian's [21] predictions, reinforcing the notion that oil prices are a key determinant of revenue for oil companies. The results of this study align with previous research, such as Dayanandan and Donker [30], which found a favorable association between crude oil prices and oil producers' ROE in North America. However, they contrast with Mohanty et al. [31], who identified a negative relationship between crude oil prices and financial performance in Central and Eastern Europe. This highlights the nuanced nature of the relationship between oil prices and revenue across different regions.

Table 2. Effect of price on company's revenue

Companies	Coefficients	Std. Error	t-value	P-value	R^2
Gazprom	898.27*	136.752	6.569	0.000	0.844
Repsol	568.09*	81.256	6.991	0.000	0.859
Taqa	47.87*	7.505	6.379	0.000	0.836
Chevron	1908.23*	153.292	12.448	0.000	0.951
Dana Gas	3.64*	1.073	3.392	0.009	0.590
Sinopec/ Addax Pet	75.16*	20.232	3.715	0.006	0.633
Exxon-Mobil	3800.66*	326.972	11.624	0.000	0.944

*: Statistically significant at 0.00 level.

3.2.2. Impact of financial factors on company revenue

The analysis employed a random effects Generalized Least Squares model to examine the relationship between revenue and several explanatory variables. The sample comprised 80 observations across ten cross-sectional units, with a time-series length of nine periods. The

dependent variable in this model is revenue. The model was used to determine the impact of the following factors on company revenue; working capital, interest coverage, inventories, current liabilities, stockholders' equity and total assets (Table 3).

Table 3. The descriptions of the variables used in models

Variables	Definition of variables	Means	Std. Dev
Working Capital	Efficiency in managing stock, debtors and creditors	126919.17	420.69
Interest Coverage	Extent of operating profit available to cover interest payable	21.15	37.28
Inventories	Accounting of items, component parts and raw materials used in production or sales	4372.15	6516.02
Current Liabilities	Debts owed by the company that must be paid within one year	16982.56	21379.69
Stockholder's Equity	Difference between a company's assets and liabilities	57244.29	70210.79

The joint test for the explanatory variables yielded a chi-square statistic of 878.84, with a p-value of 0.000, indicating that the model as a whole is highly significant. The Breusch-Pagan test for heteroskedasticity, testing the null hypothesis that the variance of the unit-specific errors is zero, resulted in a chi-square statistic of 5.45 with a p-value of 0.019 (Table 4). This suggests the presence of significant random effects in the model. The Hausman test yielded a chi-square statistic of 66.88 with a p-value of 0.000, indicating that the null hypothesis of no systematic difference between the fixed and random effects estimators is rejected. This result suggests that the fixed effects model is statistically preferred. However, given the short time dimension and limited cross-sectional variation of the dataset, the random effects model is retained to allow for the estimation of time-invariant firm-specific effects and to preserve degrees of freedom. As shown in Table 4, all factors are statistically significant and have an impact on revenue because the P-value for all these factors are smaller than 0.05.

The coefficient for working capital is -0.039 with a statistically significant p-value (<0.0001). However, the coefficient is negative, indicating an inverse relationship between working capital and revenue. Notably, a $1 increase in interest coverage boosts revenue by $709.38 (Table 4). This

contradicts the first hypothesis, suggesting that as working capital increases, revenue decreases, rather than increases [23, 24].

The coefficient for the interest coverage ratio is 709.38 with a very significant p-value (<0.0001). This supports the hypothesis, indicating that a higher interest coverage ratio is associated with higher revenue for oil companies in the Northern Region of Iraq [24, 25].

The coefficient for inventories is 3.73 and statistically significant (p=0.030. The revenue value increases by $3.73 through a $1 increase in inventories. This supports the hypothesis, suggesting that inventory levels indeed have a significant and positive impact on revenue. This finding aligns with the results of Newstyle and Opuene [26], who also identified a positive relationship between inventories and the revenues of oil companies.

The coefficient for current liabilities is 2.01 with a highly significant p-value (<0.0001). With a $1 increase in current liabilities, the revenue value increases by $2.01. The positive and significant coefficient for current liabilities confirms our hypothesis (H5) that short-term liabilities can support revenue growth through the role of trade credit in emerging markets. However, this finding contrasts with Lazaridis & Tryfonidis [27], who reported a negative association between current liabilities and firm performance. This difference may stem from variations in institutional environments and financing practices: in the Northern Region of Iraq, supplier credit often substitutes for formal financing, enabling firms to sustain production and increase sales. By contrast, in the context examined by Lazaridis & Tryfonidis [27], higher current liabilities may have reflected financial distress rather than productive operational financing.

The coefficient for stockholders' equity is 0.34 with a p-value of 0.009, which is statistically significant. With a $1 increase in stockholders' equity, the revenue value increases by $0.34. This supports the hypothesis, indicating that higher stockholders' equity is associated with higher revenue. These findings underscore the importance of carefully managing various financial and operational factors to optimize revenue generation.

Although ratio analysis is considered a simple and quick method for evaluating a company's financial position and performance, it does have certain limitations. The accuracy of financial statements is crucial in ratio calculations, as all figures are derived from these reports. If the

financial statements are weak or inaccurate, they can present a misleading view of the business. Another important limitation is that these statements often fail to account for external economic factors such as inflation, which can affect labor costs, raw material prices, and the cost of capital - ultimately impacting the company's profitability [6, 8, 9].

Table 4. Results of random effects panel data estimation model+

Variables	Coefficients	Std. Error	t-test	P-value
Constant	6454.930	4410.990	-1.463	0.1434
working capital	-0.039*	0.009	4.509	<0.0001
Interest Coverage	709.378*	84.946	8.351	<0.0001
Inventories	3.735*	1.717	2.176	0.0296
Current Liabilities	2.008*	0.420	4.780	<0.0001
Stockholder's Equity	0.337*	0.130	2.599	0.0094

*: Statistically significant at least α= 0.05 level

+: Log-Likelihood: -928.986; Hausman Ki-kare = 66.883 (P: 0.000); Breusch-Pagan: 5.453 (P: 0.001)

4. CONCLUSIONS AND RECOMMENDATIONS

The findings of this study highlight the significant role of FDI in shaping the economic and financial dynamics of the Northern Region of Iraq, particularly the oil sector. By examining the relationship between key financial ratios and company revenues, the study provides important information for policymakers and industry stakeholders seeking to increase FDI inflows and promote sustainable economic development. The empirical results indicate that all examined factors (working capital, interest coverage, inventories, current liabilities, and equity) are statistically significant predictors of company revenue. Specifically, increases in working capital are associated with a negative impact on revenue, while improvements in interest coverage, inventory levels, current liabilities, and equity contribute positively to revenue generation. These findings highlight the need for prudent financial management and efficient resource allocation in the oil sector.

Comparative financial performance analysis reveals significant heterogeneity among IOCs operating in the region. ExxonMobil demonstrates the strongest performance in terms of ROA, ROE, and ROIC, followed by Addax Petroleum, Chevron, Rosneft, and Gazprom. Gazprom leads in terms of gross profit margin, while Rosneft, DanaGas, and DNO also perform well. In terms of liquidity indicators, Genel Energy leads in both the current ratio and liquidity ratio, followed

closely by DanaGas and DNO. These differences suggest that companies with stronger financial structures and operational efficiency are better positioned to withstand market volatility and generate sustainable revenue.

The study also highlights the impact of crude oil prices on the financial performance of IOCs. While previous literature generally reports a positive relationship between oil price movements and financial results, the current analysis reveals a more nuanced relationship. Chevron and ExxonMobil demonstrate the strongest relationship between crude oil prices and company revenue, demonstrating that price dynamics remain a critical external determinant of performance. Therefore, companies operating in the Northern Region of Iraq should consider diversifying their revenue streams to mitigate exposure to oil price fluctuations. Potential strategies include investing in renewable energy projects, developing downstream activities, or exploring service-based revenue models.

Based on these findings, several key policy and management recommendations emerge. Policymakers should prioritize creating a stable and transparent regulatory environment to attract and retain foreign investors. This includes implementing clear contractual frameworks, strengthening corporate governance, and offering competitive investment incentives. Furthermore, developing public-private partnerships and facilitating the transfer of knowledge and technology from international oil companies can significantly increase sector productivity and resilience.
Companies should conduct regular financial assessments to monitor the impact of operational decisions on revenue and profitability. Effective management of working capital, maintaining healthy interest coverage ratios, and optimizing inventory levels are key steps to strengthen financial stability. Continuous investment in innovation, risk management practices, and human capital development can also enhance long-term competitiveness.

This study also acknowledges some inherent limitations in research on the Iraqi oil sector. Data availability remains a significant challenge due to limited disclosures from both government agencies and international oil companies. Despite using a panel data random-effects model and conducting appropriate diagnostic tests, potential endogeneity concerns stemming from simultaneity and omitted variables cannot be completely ruled out. Future research should consider the use of longer panel structures and richer datasets that will enable the application of more advanced econometric techniques, such as System GMM, to strengthen causal inference and

further investigate the dynamic relationship between FDI, financial performance, and revenue generation.

Overall, by addressing both firm-level and sector-wide determinants of financial performance, this study contributes to a deeper understanding of FDI dynamics in resource-rich but institutionally constrained regions. This information will help policymakers, investors, and industry leaders design strategies that promote sustainable economic development and enhance the long-term prosperity of Iraq's Northern Region oil sector.

NOMENCLATURE

FDI Foreign direct investment
IOCs International oil companies
ROA Return on assets
ROE Return on equity
ROIC Return on invested capital
GPM Gross profit margin
SPSS Statistical package for the social sciences
REM Random effects model
FEM Fixed effects model

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DECLARATION OF ETHICAL STANDARDS

The author of the paper submitted declares that nothing which is necessary for achieving the paper requires ethical committee and/or legal-special permissions.

CONTRIBUTION OF THE AUTHORS

Najı Maseeho ODEL contributed to data curation, analysis, and original draft preparation. Cuma Akbay contributed to conceptualization, methodology, and supervision, and provided software.

Cuma Akbay also contributed to writing-reviewing, editing, and supervision. All authors have read and approved the manuscript.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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