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RESEARCH ARTICLE

Effect of Earnings Ratio and Capital Structure on Share Price: The Moderating Role of Free Cash Flow in the Industrial Sector

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Abstract

The objective of this paper is to investigate the effect of the earnings ratio and capital structure on share price, with special focus on the moderating role of free cash flow (FCF) in the manufacturing sector listed on the Iraqi Stock Exchange (ISX) for the period 2016 to 2023. Using a quantitative research method, the study draws data from audited financial statements, including the income statement, balance sheet, and cash flow statement, and analyzes 10 manufacturing companies over eight years. The analysis employs a regression model, descriptive statistics, correlation analysis, ANOVA, and tests of cross-sectional dependence and non-stationarity to ensure diagnostic robustness of the results. The findings reveal that ROA has a statistically significant positive effect on share price, suggesting that investors reward companies that use their assets efficiently to generate profits, whereas ROE shows an insignificant negative correlation with share price, indicating that higher equity returns do not necessarily translate into higher market valuations, possibly due to investor concerns or external economic conditions. Regarding capital structure, DER demonstrates a positive relationship with stock prices, implying that moderate levels of debt may signal confidence and growth potential, while DAR has a negative effect, reflecting investor caution toward firms with high levels of total debt. Interestingly, the moderating role of FCF produces similar results in some variables, suggesting that although FCF is important, its effects may be different. This study is limited to the manufacturing sector on the Iraqi Stock Exchange and future research may explore its other sectors.

Keywords: Earnings ratio (ER), Capital structure (CS), Share price (SP), Free cash flow (FCF), Iraqi stock exchange (ISX)

1. Introduction

Operational decisions affect a company's capital structure and investor resources, which are vital for strategic planning. An important part of a firm's capitalization is the amount of cash available to the institution, which remains a concern for any researcher. Thus, the statement of cash flows is an addition to the balance sheet and income statement, showing changes in cash and quasi-cash items (Khajimuratov et al., 2023). It helps users to evaluate a company's performance and forecast the future by providing data on financial performance, financial condition, and monitoring of resources. Research has shown that cash flow components can be used to predict financial crises (Mohammed et al., 2024). This paper looks at cash flow as a factor that affects capital structure adjustment. Therefore, determining the debt-to-equity ratio is intended to increase the value of the company while reducing the cost of raising capital.

Crediting parties, therefore, rely on the quality of financial reports in terms of earnings and the extent to which institutions can resecure the obligation incurred in due course (Saad et al., 2025). As a result, stock return and profit margin forecasts are important to investors. Nonetheless, a wide range of factors

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influences market share prices. Despite extensive research on the correlation between profit rates and share prices, cash flow theory is generally underdeveloped. In addition to being a useful metric for determining the manager's performance's value to shareholders, it also serves as a tool for drawing in new investors (Gharaibeh et al., 2022). The reliability of financial lists is being questioned by users because of financial scandals that have occurred around the world. Therefore, investors carefully read the lists published by companies, because they affect their future decisions. One metric used by investors is the free cash flow list (Adame et al., 2023). However, the agency claims that one of the causes of the disagreement is that each side is attempting to optimise its interest in free cash flow. Therefore, it is important to resolve these conflicts between various interests, such as management and shareholders. Additionally, businesses are searching for ways to resolve this link. Profitability and free cash flow are therefore crucial, but when a company produces a lot of free cash flow, investors and management may have conflicting ideas (Sapuan et al., 2021).

In financial markets, share price appraisal is a complicated matter, particularly in in emerging economies like Iraq. Because of firm-specific dynamics, macroeconomic volatility, and contextual differences, the existing literature on the impact of financial measures on share price is contradictory. There is not enough research done on the connection between market valuation and financial indicators on the Iraqi Stock Exchange. While capital structure and earnings ratios are important metrics, investors' interpretations can be greatly influenced by free cash flow (FCF). By examining the combined effects of these factors on share prices, our study seeks to bridge this gap. The study examines the impact of the income ratio and capital structure on share prices in the Iraqi stock market manufacturing sector. It provides insights for investors, corporate executives, policymakers, and regulators, highlighting the strategic implications of capital structure choice and cash flow management.

The study can span theoretical, empirical, and managerial contributions: First, theoretical contributions such as: Extension of financial theory: The study may extend existing financial theories, such as the Modigliani-Miller Theorem, Signalling Theory, or Pecking Order Theory, by integrating the moderating role of Free Cash Flow (FCF) in the relationship between capital structure/earnings and share price. New conceptual model: The study could offer a refined or novel framework that explains how earnings performance and financing decisions influence investor perceptions and share value, moderated by FCF. Interdisciplinary integration: It could bridge corporate finance and market valuation literature by including operational metrics like FCF in capital market studies. Second, empirical contributions, for instance, evidence from specific markets or sectors: If the research is conducted in a specific region (e.g., emerging markets) or sector (e.g., manufacturing, tech), it provides localised insights that might contrast with global findings. Moderating analysis: Many past studies focus only on direct effects. Introducing FCF as a moderator allows the study to reveal when and under what conditions earnings or capital structure have stronger or weaker effects on share price. Data contribution: The study might use updated or unique panel data, time-series analysis, or firm-level datasets, enhancing empirical literature. Third, managerial contributions, like strategic financial decision-making: The results could help CFOs and financial managers understand how their financing mix (debt vs. equity) and earnings management impact investor behaviour and share value. FCF management insights: It might show that high free cash flow can mitigate the negative effects of high leverage or low earnings, suggesting more strategic use of excess cash. Value creation practices: Managers can better align operational efficiency and capital structure decisions to maximise shareholder value.

This is how the remainder of the paper is structured: The paper's theoretical background, empirical literature, and hypothesis development are covered in Section 2, research methodology is covered in Section 3, results and discussion are covered in Section 4, and implications and limitations are discussed in Section 5.

2. Literature review and hypothesis development

2.1. Theoretical background

Several financial theories are used to support developing hypotheses: signaling theory, which states that companies with high ROE and ROA signal strong financial health and efficient management to investors. Hence, a higher ROE and ROA suggest that a company is effectively generating profits from shareholders' equity, which can increase investor confidence and, therefore, demand for the stock—driving the share price up. Moreover, a positive Debt-to-Equity Ratio (DER) can indicate that a firm is using debt strategically to finance its growth, and this signals strength and confidence to the market. As a result, investors might react positively, leading to an increase in the share price (Agustin et al., 2023).

The Residual Income Valuation Model (RIVM) is based on the main idea that the value of a firm equals the book value of equity plus the present value of future residual income. It is connected to ROE and ROA in a way that residual income is positively influenced by ROE and ROA. A company with an ROE and ROA above its cost of equity adds value to shareholders, boosting the firm's value and, therefore, its share price (Yeh, 2024).

Efficient Market Hypothesis (EMH) – Semi-Strong Form points out that all publicly available information, including financial ratios like ROE and ROA, is reflected in stock prices. It states that if ROE and ROA are high and viewed positively by the market, it will be quickly priced into stock, resulting in a higher share price (Öztürk et al., 2024).

Agency Theory's main idea is that ROE can reflect how well management is using shareholders' capital. Besides, ROA reflects how well management uses the company's assets to generate returns, which directly impacts shareholder value. High ROE indicates effective management and alignment with shareholder interests, reducing agency costs and increasing market valuation. Further, high ROA indicates that management is effectively utilizing the firm's assets to generate profit, which reduces agency costs (such as wasteful spending or inefficiency) and increases shareholder value. This higher perceived value can lead to an increase in share price. In addition, A moderate level of debt in a company's capital structure can act as a discipline mechanism for managers. With more debt, managers are required to make regular interest payments, reducing the potential for over-investment or inefficient projects. This leads to improved operational performance, greater shareholder value, and a higher share price. Furthermore, a moderately high Debt to Assets (DAR) signals disciplined capital usage, which enhances firm value (Dawar, 2014).

Modern Portfolio Theory (MPT) and CAPM, based on this theory, investors seek to maximise return for a given level of risk, and they use financial ratios (like ROA) to assess a company's performance relative to its risk. It is connected to ROE in a way that high-ROE companies are often viewed as offering better returns without proportional increases in risk, making their stocks more attractive and potentially driving prices higher. In addition, a higher ROA suggests that a company is efficiently utilizing its assets to generate profit, which can make the stock more attractive to investors. This could lead to an increase in the stock price due to higher expected returns and perceived lower risk (Surtee & Alagidede, 2023).

Pecking Order Theory: According to this theory, firms prefer internal financing (retained earnings) first, then debt, and finally equity when raising capital. The theory emphasizes that firms with stable and predictable cash flows will prefer debt to equity to avoid dilution of ownership. Hence, a firm that has a moderate DER is likely to have used debt financing in a manner consistent with the pecking order, meaning the firm is confident in its ability to generate sufficient cash flow to meet debt obligations. This financial strategy can lead to higher profitability, lower cost of capital, and, ultimately, a higher share price (Eldomiaty et al., 2017).

Modigliani-Miller Proposition (with taxes): In the presence of taxes, the value of a firm increases with the use of debt, due to the tax shield on interest payments. Furthermore, a higher DER implies a higher use of debt, which leads to a larger interest expense that is tax-deductible. This tax shield increases the firm's after-tax profits, improving its overall valuation and share price. Thus, if the firm does not take on excessive debt that would lead to financial distress, a positive DER can have a significant impact on the share price. Hence, a higher Debt to Assets (DAR) implies greater leverage and potential value enhancement (Brusov et al., 2020).

Capital Structure Theory (Capital Structure Irrelevance in Perfect Markets): Under perfect market conditions, the value of a firm is unaffected by its capital structure. However, when imperfections like taxes or bankruptcy costs exist, capital structure matters. In real-world markets, DER does have an impact. A positive DER (moderate debt) might be seen as a sign of efficient capital structure, where debt is used to maximize firm value without taking on excessive financial risk. This could lead to a higher stock price as investors see it as a company that is effectively managing its capital structure to enhance profitability. Additionally, Firms may adjust leverage to maximize EPS, which can push the share price higher when DAR increases and EPS improves (Kavous Ardalan, 2017).

2.2. *Empirical literature*

2.2.1. *The relationship between return on equity, return on assets, and share price*

Return on equity (ROE) is a financial performance indicator that measures the ability of companies to generate a net profit on the amount of capital invested after taxes (Anindya et al., 2024). Therefore, it is a ratio that compares net profit to shareholders' equity, indicating a business's ability to generate profit over a given period of time (Puspitasari et al., 2025). Besides, Return on Assets (ROA) also measures a company's ability to generate profitability from its assets, indicating effective management practices. This ratio

indicates that the company can efficiently use the capital it owns in order to achieve its stated objective (Sangawi et al., 2023). Therefore, return on assets can be used as a financial measure to assess the ability and performance of management in companies. The prices set by the market for shares can be seen as a key measure of a company's market value. However, several factors can affect share prices, such as the company's financial and management performance, annual financial statements presented, the company's operating environment, political stability, and other events (Kazancoglu et al., 2018). Share price movements are sometimes complex and difficult to predict for the future because they are influenced by many variables that interact with each other. Therefore, to analyse the share price, risks must be considered, which requires careful and scientific analysis.

Around the world, numerous studies have explored the relationship between return on equity, return on assets, and share price. For instance, share prices are significantly affected by ROE and EPS (Lusiana, 2020, Choiriya et al., 2020) and NPM, and OPM (Choiriya et al., 2020) and ROA in Indonesia's Stock Exchange (Choiriya et al., 2020) and Amman Stock Exchange (Allozi & Obeidat, 2016). However, a study by Dianita et al. (2021) found no correlation between ROA and share prices. Furthermore, share prices are partially unaffected by ROE. Additionally, during the 2015–2019 period, the share prices of pharmaceutical businesses listed on the IDX were unaffected by ROA or ROE. Moreover, Noor and Rosyid (2018) partial finding indicates that the Bank Danamon share price is significantly impacted by the Capital Adequacy Ratio (CAR) and Loan to Deposit Ratio (LDR), but not by the partial ROE. Hence, Lusiana (2020) found that ROA does not affect the stock price.

With all these references, there is no research exactly focusing on the relationship between ROA and ROE with share price in the Iraqi stock exchange. Thus, the following hypotheses have developed:

H_1 Return on Equity (ROE) has a positive and significant effect on the share price.

H_2 Return on Assets (ROA) has a positive and significant effect on the share price.

2.2.2. The relationship between debt to equity, debt to assets with share price

The debt-to-equity ratio (DER) is the ratio used to evaluate debt-to-equity. This ratio can also be used to ascertain how much of the company's capital is being used as loan collateral. Conversely, the debt-to-equity ratio (DER) distinguishes total debt from firm equity (Oktasari & Nurjaya, 2024). This ratio is represented by one of the ratios of how much of the company's total capital consists of debt and how much of the capital returns to shareholders' equity. The larger the DER ratio, the higher the overall debt component. Hence, the debt-to-assets ratio shows the ratio calculated between total debt and total assets, plus it shows how much of a company's assets are financed through debt. A high rate indicates an increased cost of capital, making it difficult to obtain additional debt (Rivai et al., 2025).

Debt to assets and debt to equity have been the subject of numerous studies worldwide. For instance, (Yanto et al., 2018) and Lutfiah and Soegoto (2020) discovered that the debt ratio and EPS both significantly impact the stock price at the same time. Furthermore, Rahmawati and Garad (2023) findings demonstrated that stock prices were influenced by the DER, EPS, and price-earnings ratio. However, the debt-to-equity ratio has no effect on the stock price, according to research by Airlangga et al. (2020), Setiawan et al. (2020). As a result, Onny Siagian et al. (2021) found that DAR had a little impact on stock prices. Wang and Kılınç-Karzan (2020) demonstrated that the DAR has a negative and insignificant impact on the stock prices of companies in the Indonesia Stock Exchange's basic industrial sector. Given these findings we propose that:

H_3: Debt-to-Equity Ratio (DER) has a significant impact on share price.

H_4: Debt-to-Assets Ratio (DAR) has a significant impact on share price.

2.2.3. Moderating role of free cash flow

Free cash flow is the amount of earnings after distributing shareholders' equity and assuming the cost of debt that is part of the capital structure. This indicates the ability and efficiency of the company in order to continue to invest capital and create other financial resources, especially in companies that typically have significant free cash flows over a period of time (Adame et al., 2023). A company with significant free cash flow is performing well, which enhances shareholder value and may reduce agency expenses (Rahmawati & Garad, 2023).

The cash flow as a moderator variable has been the subject of numerous studies worldwide. For instance, Kavous Ardalan (2017) contended that the negative moderating effect of CSR on investment cash flow sensitivity is mediated by agency costs of free cash flow. Furthermore, the findings of Saif et al. (2020) demonstrated that cash flows considerably yet adversely affect the association between corporate investment choices and business performance. According to Kinyua (2021), operating cash flows had a negligible moderating effect on firm financial characteristics and leverage of non-financial

enterprises listed on the Nairobi Securities Exchange. Furthermore, the association between optimal and excessive CSR and business value is positively moderated by cash flow, according to Al-shaer et al. (2023). Furthermore, Junaidu et al. (2024) found that free cash flow considerably moderates the connections between board size, independence, and gender diversity and market value. Additionally, operating cash flow improves the correlation between cash and ROA to the stock price, according to Nugroho and Pertiwi (2021). Additionally, Dawar (2014) found that dividend policies have a detrimental effect on company value and that free cash flow, as the moderating element, strongly influences IC. Additionally (Zimon et al., 2023) discovered a strong correlation between earnings management and historical performance, with free cash flow acting as a moderating factor. Based on the above discussion, we suggest that:

H_5: Free cash flow as a moderating variable affects the relationship between return on equity (ROE) and share price.

H_6: Free cash flow as a moderating variable affects the relationship between Return on Assets (ROA) and share price.

H_7: Free cash flow as a moderating variable affects the relationship between Debt-to-Equity Ratio (DER) and share price.

H_8: Free cash flow as a moderating variable affects the relationship between Debt-to-Assets Ratio (DAR) and share price.

3. Methodology

3.1. Number of companies and sample size

The study analyzes the financial listings of 10 out of 28 companies listed on the Iraqi Stock Exchange (ISX) (www.isx-iq.net) in the manufacturing sector for the period (2016 to 2023). Of those 28 companies, 8 were not actively available on the stock market at the end of 2015. Therefore, only 10 companies had the data available in their financial statements correctly and accurately, which could be used in the study. The dataset consists of 80 observations, comprising balanced panel data containing observed utility from annual audited financial reports for each company over eight years. This sample size provides a strong basis for statistical analysis, enabling the examination of key relationships between income ratios, capital structure, free cash flow, and share price. The selected companies cover the manufacturing sector, which enhances the generalizability of the findings while maintaining a focus on the manufacturing sector of the Iraqi market.

3.2. Method of data collection

This study used a quantitative research approach for 10 manufacturing sector companies listed on the Iraqi Stock Exchange (ISX) for the period (2016–2023). Data selection is determined by targeted sampling using data collected from companies' annual audited financial statements, including balance sheets, income statements, and cash flow statements, obtained through the Iraq Stock Exchange website www.isx-iq.net. The independent variables were measured as return on assets (ROA), return on equity (ROE), debt-to-equity ratio (DER), and debt-to-assets ratio (DAR). The dependent variable, on the other hand, is measured by share price (SP), while free cash flow (FCF) serves as a moderating variable that affects the extent of this relationship. EViews version 12 is used for data analysis. This rigorous methodology ensures the reliability and comparability of findings in accordance with applicable laws and regulations on the Iraqi Stock Exchange (ISX).

3.2.1. Variables

You will need to identify and describe several crucial research variables for my study, "The effect of earning ratio, capital structure, on share price and free cash flow." The following are the main considerations to make:

Earnings ratio and capital structure have been used as independent variables in order to determine the effects. where each return on equity measures the ratio of Earnings ratio in this study and return on assets. This is because capital structure is measured as another independent variable by each of the debt-to-equity ratio and the debt-to-assets ratio. However, Share Price has been used as the dependent variable which is measured by the Selling Price Share which indicates how much each of the independent variables affect the Share Price. At the same time, free cash flow was used as the moderating variable so as to indicate the effect of this type of variable on each of the independent variables and the dependent variable. Table 1 indicates each of the variables and the equations used to represent the results.

3.3. Model design

Three types of variables played a role in this study, which consist of the independent variables of income ratio measured by the rate of return on capital and the rate of return on assets. Capital structure measured by debt-to-assets ratio and debt-to-equity ratio. In contrast, stock price is used as the dependent variable, while free cash flow is used as the moderating

Table 1. Variable definitions.

Type	Variables	Label	Descriptions	Source
Independent Variable	Earnings Ratio	Return On Equity	Net Income/Shareholders' Equity	(Kumoro et al., 2020)
		Return On Assets	Net Income/Total Assets	(Aidoo et al., 2024)
	Capital structure	Debt-to-Equity Ratio	Total Debt/Shareholders' Equity	(Mohammed et al., 2024)
		Debt-to-Assets Ratio	Total Debts/Total Assets	(Onny Siagian et al., 2021)
Dependent Variable	Share Price	Share Price	Selling Price Share	(Sharif et al., 2015)
Moderating Variable	Free Cash Flow	Free Cash Flow	Operating Cash Flow - taxes -interest - dividends/Total assets	(Parwoto & Sunarya Sulaeman, 2021)

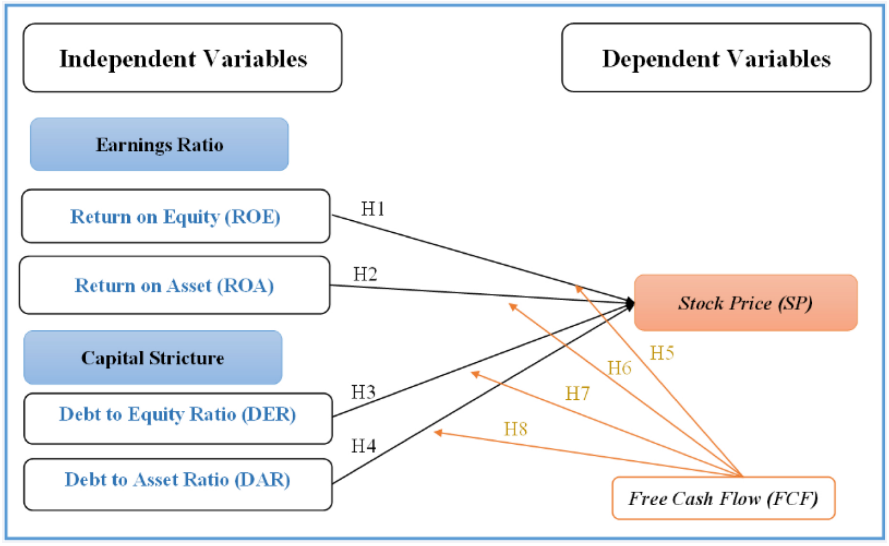

Fig. 1. Research framework.
Source: Prepared by authors based on previous studies.

variable in the study. Access to information sources becomes a barrier to the provision of information. Fig. 1 therefore shows the relationship between each of the variables. This figure serves as a starting point for determining a framework between the independent variables (Earnings Ratio and Capital structure) and the dependent variables (Share Price), the effect that the mean variable has between the independent variables and the dependent variable (Free Cash Flow).

Model 1:

$$SP = a_0 + \beta_1 ROA + \beta_2 ROE + \beta_3 DER + \beta_4 DAR + e$$

Model 2:

$$SP = a_0 + \beta_1 ROA \times FCF + \beta_2 ROE \times FCF + \beta_3 DER \times FCF + \beta_4 DAR \times FCF + e$$

Description

SP: Share Price (Dependent variables).
FCF: Free Cash Flow (Moderating variables).
ROA: Return On Assets (Independent variables).
ROE: Return On Equity (Independent variables).
DER: Debt-to-Equity Ratio (Independent variables).
DAR: Debt-to-Assets Ratio (Independent variables).
a_0: Constants.
$\beta_1, \cdots, \beta_4$: Partial Coefficient Regression
e: Error

4. Results

4.1. Statistics, descriptive

The descriptive statistics presented in Table 2 illustrate the characteristics of each of the variables in Models 1 & 2. The statistical results show the stock price for the mean value of 0.2805, with the minimum and maximum values of 0.6400, 1.0000. Versus a standard deviation with a value of 0.6129. Free Cash Flow (FCF) shows a mean value of -3.95, with a minimum value of -1.1711 versus a maximum value of 3.15. This result also shows that the FCF is not normally distributed, with a significant deviation with a value of 1.79. Return on Assets (ROA) is a variable as one of the profitability indicators, whose mean value is 0.0648, which this result is also approximately four times the median value of 0.0164, which shows that some of the firms are earning enough profit. Meanwhile, the

Table 2. Descriptive statistics (Model 1 & 2).

	SP	FCF	ROA	ROE	DER	DAR
Mean	0.6400	-0.9509	0.0648	0.4303	0.9988	0.1667
Median	0.3500	-1.0008	0.0164	0.0463	0.3161	0.0897
Maximum	1.0000	3.1510	1.2144	1.4037	2.1841	1.9471
Minimum	0.2805	-1.1711	-0.2821	-0.3030	-0.4857	0.0032
Std. Dev.	0.6129	1.7910	0.1774	1.1963	3.3323	0.2757
Observations	80	80	80	80	80	80

Source: EViews Version 12 data processing.

return on equity (ROE) shows a mean value of 0.4303 versus a median value of 0.0463. This result shows a positive result in stock returns. The mean value of the debt-to-equity ratio (DER) is shown as 0.9988, against the median value of 0.3161, which is confirmed by the large range of DER (-0.4857 to 2.1841) and the largest standard deviation (3.3323) among all variables. This result also shows that firms use a high ratio of debt, highlighting the high variability in capital structure. The debt-to-assets ratio (DAR) shows less dispersion but is still significantly variable, with a mean of 0.1667 and a standard deviation of 0.2757.

4.2. Results of correlation

Table 3 shows the correlation matrix between the independent and dependent variables. It therefore provides a detailed analysis of the relationship between share price (SP) and underlying financial indicators before and after the application of free cash flow. The results of the return on assets show that there is a strong positive relationship with share price in the first model, with a value of 0.79 and a p-value of 0.0039. However, in the second model, asset return with share price after using free cash flow as a moderating variable affected the relationship between variables; the results show a strong negative relationship with the value of (-0.57) and ($p = 0.0034$). Therefore, after using free cash flow as a moderating variable, the relationship between the two variables is reversed, but they are statistically significant. Nevertheless, return on equity is positively correlated with share price before and after using free cash flow as a moderating variable, with values of 0.79 and 0.41 in the first and second models, respectively. However, the correlations in both models are not statistically significant.

The debt-to-equity ratio is a measure of the capital structure variable. The result shows that there is a moderate positive relationship with share price in both models, with a value of 0.313 in the first model and 0.343 in the second model. That is, using free cash flow as the moderating variable has led to the strength of the relationship between the variables. However, the debt-to-equity ratio variable is positively correlated with share price at 0.57. However, after using free cash flow as the moderating variable, the effect on the relationship between the debt-to-assets ratio and share price reversed their relationship with a value of (-0.54) in the second model.

4.3. Results of regression

The results of Table 4 describe the panel least squares to evaluate the effect of each of the independent variables of earnings ratio and capital structure

Table 3. Results of correlation (Model 1 & 2).

Correlation	SP(M1)	SP (M2)	ROA	ROE	DER	DAR
SP (M1)	1.000000					
SP (M2)	——	1.000000				
ROA	0.79399	-0.56575	1.000000			
ROE	0.78800	0.40539	0.28893	1.000000		
DER	0.31257	0.34289	-0.02621	0.27949	1.000000	
DAR	0.56708	-0.53634	0.39088	-0.30091	0.15156	1.000000
Probability						
SP (M1)	——					
SP (M2)	——	——				
ROA	0.0039	0.0034	——			
ROE	0.0872	0.4072	0.0093	——		
DER	0.0031	0.0231	0.0816	0.0120	——	
DAR	0.0173	0.0173	0.0003	0.7910	0.1796	——

Notes: ***Significant at 10% level; **Significant at 5% level: *Significant at 1% level.
Source: EViews Version 12 data processing.

Table 4. Regression analysis.

Dependent Variable: SP Method: Panel Least Squares				
	Model 1 (SP)		Model 2 (SP)	
Variable	Coef.	t-Stat.	Coef.	t-Stat.
ROA	1.98010 (0.0433)	2.463187	0.736759 (0.0041)	0.146392
ROE	-2.18008 (0.4202)	-0.856316	-0.688815 (0.3247)	-0.993080
DER	0.736255 (0.0015)	0.115165	-0.570190 (0.0168)	-2.460978
DAR	-9.38009 (0.0020)	-2.338080	0.174624 (0.0066)	0.054710
C	-3.59009 (0.0004)	-6.376599	12.06963 (0.0000)	14.27081
Effects Specification Cross-section fixed (dummy variables) Period fixed (dummy variables)				
R-squared	0.519994		0.948815	
Adjusted R-squared	0.357280		0.931464	
F-statistic	3.195757		54.68375	
Prob(F-statistic)	0.000276		0.000000	

Source: EViews Version 12 data processing.

on share price, before and after using free cash flow as a moderating variable.

The results show that return on assets has a significant positive effect on stock price by =1.98010, with Prob smaller than 0.05. This result indicates that a one-unit increase in return on assets leads to an increase in stock price by 1.98010, holding all other factors constant. With this result, the return on assets variable has a significant positive effect on stock prices. This result also indicates the acceptance of hypothesis H1 versus the rejection of hypothesis H0, because the result shows that Prob. (0.0433), which is smaller than 0.05. Meanwhile, after using free cash flow as a moderating variable, the relationship between asset returns and share prices generated a significant positive effect. As a result, after using free cash flow, it affected the relationship between return on assets and share price. This result also indicates the acceptance of hypothesis H5 versus the rejection of hypothesis H0, because the result shows that Prob. (0.0041), which is smaller than 0.05.

Furthermore, return on equity has a negative impact on stock prices, but when free cash flow is used as a moderating variable, the relationship between the variables does not change; however, these relationships in both models are statistically non-significant, making a p-value (0.4202, 0.3247). With this result, asset returns have a non-significant positive effect on share prices. This result indicates the acceptance of hypothesis H0 versus the rejection of hypothesis H2, because the result shows that Prob. (0.4202) is greater than 0.05. Nevertheless, in the second model, return on equity has a non-significant negative effect on share prices. This result indicates the acceptance of hypothesis H0 versus the rejection of hypothesis H6, because the result shows that Prob. (0.3247) is greater than 0.05. After adding free cash flow as a moderating variable, the relationship between the independent variable and the dependent variable did but produce no significant effect to lead to a significant effect among the variables.

After using debt-to-equity ratio and debt-to-assets ratio as two measures of capital structure. The results in Table 4 are as follows. In the first model, the debt-to-equity ratio has a significant positive effect on stock price by 0.736255 and a P value 0.0015, which is statistically significant as it is less than 0.05. Therefore, the debt-to-equity ratio has a significant positive effect on stock prices. This result also indicates the acceptance of hypothesis H3 versus the rejection of hypothesis H0, because the result shows that Prob. (0.0015) is smaller than 0.05. Meanwhile, in the second model, free cash flow as a moderating variable shows the effect between debt-to-equity ratio on stock price negatively, where the coefficient value is equal to -0.570190 and Prob = 0.0168, which this result is statistically significant. With this result, the debt-to-equity ratio has a significant negative effect on the stock price. This result also indicates the acceptance of hypothesis H7 versus the rejection of hypothesis H0, because the result shows that Prob. (0.0168) is smaller than 0.05. After adding free cash flow as a moderating variable, it affected the relationship between the variables.

The debt-to-asset ratio, as another measure of capital structure, has a significant negative effect on stock prices in the first model. With a ratio of -9.38009, with probability 0.0020, which is statistically significant as it is less than 0.05, this leads to a lower stock price with a value of 9.38 and vice versa. Therefore, the debt-to-assets ratio has a significant negative impact on

stock prices. This result also indicates the acceptance of hypothesis H4 versus the rejection of hypothesis H0, because the result shows that Prob. (0.0020) is smaller than 0.05. Meanwhile, adding free cash flow as a moderating variable has affected the relationship between debt-to-assets ratio and stock price; It has reversed, with a ratio of 0.174624 and a probability of 0.0066. This result also shows that debt-to-assets ratio has a significant positive effect on stock prices. This result also indicates the acceptance of hypothesis H8 versus the rejection of hypothesis H0, because the result shows that Prob. (0.0066) is smaller than 0.05. After adding free cash flow as a moderating variable, the relationship between variables was reversed.

The results (R) presented in Table 4 refer to the determination of the relationship between the rate of return and capital structure on the stock price. Therefore, the effect of income ratio and capital structure on share price. The result obtained by the correlation coefficient (adjusted R-squared) indicates 0.357, which means that there is a positive relationship between the independent variable and the dependent variable by 35.7%. After adding free cash flow as a moderating variable, this figure rose to 93.1%. Moreover, the results (R-squared) in the first model indicate 0.5199. It means that the impact of each of the independent variables (return on assets, return on equity, debt-to-equity ratio, and debt-to-equity ratio) on share price is determined by 52%; 48% of the other variables have an impact on share price not mentioned in the model. At the same time, free cash flow as a moderating variable affected the relationship between the independent variables and the dependent variable, which indicates an increase (R-squared) to 0.948815, i.e., the independent variables affect the dependent variable by 94.88%. The other variables not mentioned in the model have an impact of 1.12% on the dependent variable. This result, which is above 60%, shows an excellent result after use of free cash flow.

Model :1

$$SP = -3.59009.5 + 1.98010.9 \times ROA - 2.18008.758 \times ROE + 1736255.6538 \times DER - 9.38009.84 \times DAR$$

Model 2:

$$SP = -12.06963 + 0.736759 \times (ROA \times FCF) - 0.688815 \times (ROE \times FCF) - 0.570190 \times (DER \times FCF) - 0.174624 \times (DAR \times FCF)$$

5. Discussion

According to the result presented in Model 1, return on assets (ROA) has a statistically significant positive effect on stock prices. This shows the efficiency of companies that are able to utilize their asset at a high level.

This result is in line with valuation theory, which assumes that operating efficiency and cash flow will enhance investor confidence. The findings of this study point to the same results as this study (Tarigan et al., 2024), which mentions a significant effect of ROA, QR, DER simultaneously on stock price. However, significantly ROA results indicate a positive impact on stock price. So, companies should pay more attention to the way they use their assets with the aim of increasing their share price. Because showing ROA will show the net profit earned by the company on its total assets, which will gain investor confidence and increase the amount of capital invested, which will directly benefit the managers and the companies themselves (Zimon et al., 2023). In addition to free cash flow the moderating variable was used to identify the effect it has on each of the independent variables on the dependent variable. The results show that the use of this moderating variable could not generally affect the relationship between the variables. This result is broadly similar to the results of the study (Mangku et al., 2024) which deals with showing the effect caused by free cash flow between firm value versus earnings and capital structure.

According to the results, returns on equity have a negative impact on stock prices, but this effect is not statistically significant in either model. This result is similar to the results of his research (Dianita et al., 2021) study discusses the impact of return on assets and return on capital on stock prices. The same result is obtained in showing that returns on equity do not affect stock prices due to the lack of significant impact on stock prices. It indicates that earnings on a stock basis do not explain the changes that occur independently of SP by controlling for time. Since, ROE is one of the ratios that are sensitive to financial leverage. This ratio indicates how successfully the capital has been reinvested in order to achieve the specified objective. Because ROE is used to show the amount of return on investment per share (Christia et al., 2021). Therefore, this ratio is considered one of the measures to measure the company's ability to reinvest its capital in order to achieve a certain profit. Despite this result, Puspitasari et al. (2025) study indicates a significant negative impact of return on equity on the share prices of Lq45 companies for the period 2021–2023 on the Indonesian Stock Exchange. Therefore, any result that shows a low return on equity indicates a lower return on investment. This suggests that the earnings per share are so low that the target has not been achieved properly (Murniati, 2016).

The results of the debt-to-equity ratio in Model 1 indicate a significant positive effect of stock price.

So, the higher the result of this ratio, the capital structure, companies rely more on debt than shareholders' equity, which increases the cost of capital. Therefore, companies should be properly classified between equities and debt, in order to avoid the risk of bankruptcy in the long run. So even though equity prices are falling one of the main reasons is the debt-to-equity ratio is going up. This result is similar to the result of the study (Murniati, 2016) which indicates a significant positive effect between the debt-to-equity ratio and the stock price. Therefore, investors find this ratio very important because it indicates the capital structure. The more diversified the capital structure, the higher the debt-to-equity ratio. This type of ratio increases the cost of capital, supporting the profit theory. The results of this study are similar to those of the Tarigan et al. (2024) study. However, according to Oktasari and Nurjaya (2024) study, it shows the opposite result.

The indicate that debt to assets ratio has significant statistically significant effect on stock price. This result is similar to the results of the study (Onny Siagian et al., 2021). Because this ratio refers to measuring the amount of debt used to finance the institution. Therefore, a high ratio indicates a higher proportion of debt in the company's capital structure that it intends to reinvest in order to earn some more profit. Conversely, the low ratio indicates that the company relies more on domestic financial resources than on debt, which can have a positive impact on the stock price. This result means that when the stock price rises, the company relies less on debt, ie the debt-to-asset ratio has a low result. This result is supported by the Modiglani-Miller theory when stock prices fall while the debt-to-equity ratio rises (Murniati, 2016).

6. Conclusion

This study analyses the effect of the earnings ratio as an independent variable measured by return on assets (ROA) and return on equity (ROE). Another independent variable is capital structure, such as debt-to-equity ratio (DER) and debt-to-equity ratio (DAR). (2016 to 2023). Free cash flow (FCF) was added to the study as a moderating variable. The results reveal that return on assets has a statistically significant positive effect on stock prices, indicating that firms with high asset management efficiency are more attractive to investors. At the same time, free cash flow as a moderating variable has kept this positive effect between each, of the asset returns and stock prices positive. Conversely, return on equity (ROE) results show a non-significant negative relationship in both models. This result also suggests that other variables not explicitly mentioned could be causing the effects. Therefore, we see that when free cash flow is added as a moderate variable, it has no effect on the relationship between the variables.

Among capital structure measures, the debt-to-equity ratio had a significant positive effect on stock price before adding free cash flow as a moderating variable for the study. This result suggests that investors and financial analysts may interpret this ratio as an indicator of growth opportunity. The debt-to-assets ratio, on the other hand, had a statistically significant positive effect on stock prices. This reflects uncertainty about the high level of debt ratios in the capital structure and financial risk. Although free cash flow was added as a moderating variable to the study, the results indicate an opposite effect on the relationship between the independent variable and the dependent variable. This indicates the impacts associated with the nature of work are above and beyond market capacity. In addition, the results show cross-dependence and volatility, indicating that external economic factors or unobserved sectors may constrain demand on share prices. This requires more sophisticated measurement economy approaches in future analyses. These insights have practical implications: investors and analysts may rely on return on assets and debt-to-equity ratios as key indicators of share prices, boards must indicate appropriate debt levels to balance risk and growth, and policymakers may focus on improving market transparency. Overall, this study enriches the understanding of how earnings, asset structure, and cash flow dynamics interact to affect share prices in emerging markets, while laying a foundation for future research using broader samples and advanced modelling techniques.

The study suggests that investors, corporate managers, and policymakers should adopt a strategic approach to financial decision-making within the Iraqi Stock Exchange (ISE). Focusing on companies with strong Return on Assets (ROA) and moderate Debt-to-Equity Ratios can positively correlate with share prices and growth potential. Corporate managers should optimize capital structure and enhance operational efficiency. Policymakers should strengthen market transparency and regulatory mechanisms to reduce external shocks and support sustainable economic development.

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Conflict of interest

We declare that there is no conflict of interest regarding this study or its publication.

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Authors' declaration

- I/We hereby confirm that all the Figures and Tables in the manuscript are mine/ours. Furthermore, any Figures and images that are not mine/ours have been included with the necessary permission for re-publication, which is attached to the manuscript.
- Ethical Clearance: The project was approved by the local ethical committee at Charmo University.
- No animal studies are present in the manuscript.
- No human studies are present in the manuscript.

Data availability

The data used in this study are available from me upon reasonable request.

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