

Article

The Impact of CFO Risk-Taking Behaviour on Corporate Financial Performance: Evidence from the Industrial, Energy, and Petrochemical Sectors in Gulf Cooperation Council (GCC) Countries

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Abstract

Background: The Chief Financial Officer (CFO) has become a central strategic actor in capital-intensive firms; however, little evidence links CFO risk-taking behaviour to firm performance outside developed markets. This study examines how CFO risk-taking affects corporate financial performance in the Industrial, Energy and Petrochemical sectors of the Gulf Cooperation Council (GCC) countries. **Methods:** Using 260 firm-year observations (2015–2024) from 26 listed firms, this study measures CFO risk-taking through financial leverage, capital expenditure intensity, earnings volatility, and cash flow volatility, and firm performance through Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS). Panel Fixed-Effects regression and a Vector Autoregression (VAR) model are used to estimate contemporaneous and dynamic relationships, guided by Agency Theory, Upper Echelons Theory and Prospect Theory. **Results:** CFO risk-taking proxies are significantly associated with ROA: leverage and cash flow volatility reduce ROA, while earnings volatility and capital expenditure raise it. The ROE model is a robust null finding, and EPS evidence is limited to earnings volatility. The VAR results indicate time-varying, exploratory, and dynamic relationships between risk-taking and performance. **Conclusions:** This study contributes to the literature in three ways: it shifts the analytical focus from the widely studied CEO to the increasingly influential CFO; it provides the first large-scale empirical evidence on CFO risk-taking for the under-researched GCC region; and it operationalises CFO risk-taking through a finer set of proxies than prior work. The findings imply that GCC boards and investors should treat financial leverage and cash flow stability as behavioural risk indicators and that regulators may benefit from encouraging more granular CFO-level risk disclosure.



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Keywords: CFO risk-taking; corporate financial performance; financial leverage; earnings volatility; Gulf Cooperation Council (GCC); Vector Autoregression (VAR); corporate governance

1. Introduction

In a high-stakes and capital-intensive environment, the Chief Financial Officer (CFO) has transformed from an accountant of the past to an architect of company strategy and value creation at its core (Sax & Andersen, 2019). Since these markets are still growing,

according to [Gulf Today \(2025\)](#), and the nominal GDP is estimated to be close to USD 6 trillion, the decisions of CFOs in terms of capital structure, investment, and risk have become key determinants of firm survival and growth ([Barbi & Febo, 2025](#)). Although the bulk of the academic literature has considered the Chief Executive Officer (CEO), the contribution of the behavioural characteristics, specifically risk-taking behavioural inclination, of the CFO has not received much attention in corporate finance ([Firk et al., 2023](#)).

This is an exceptionally wide gap in the Gulf Cooperation Council (GCC), where specific institutional features, including concentrated ownership, significant state involvement, and heavy reliance on capital-intensive sectors, create a unique environment for financial decision-making ([Al-Amri et al., 2017](#)). The literature has been deficient in linking the risk-taking attitudes of CFOs to actual financial returns. This study directly addresses this gap by exploring one of its main research questions: How does CFO risk-taking behaviour affect corporate financial performance in the industrial, energy, and petrochemical sectors of Qatar, Saudi Arabia, and the UAE?

To address this question, we use upper echelons and agency theories to examine the intricate linkage between CFO actions and firm performance. This study makes three main contributions to the literature. First, we shift the analytical focus from the widely researched CEO to the increasingly powerful CFO and examine how CFO-specific behaviour affects a firm's financial performance. Second, we provide the first large-scale empirical evidence from the under-researched GCC region, offering insights that complement studies conducted in developed markets. Third, we operationalise CFO risk-taking using a finer set of proxies (financial leverage, capital expenditure intensity, and earnings/cash flow volatility) and test their effect on standard performance measures (ROA, ROE, and EPS).

This study contributes to investors, boards of directors, and policymakers by clarifying the critical role of the CFO in corporate value creation, drawing on a comprehensive panel of listed companies between 2015 and 2024. The results indicate whether CFO risk-taking is driven by growth or instability in these key emerging markets.

The remainder of this paper is organised as follows. Section 2 analyses the literature on the matter and formulates our hypotheses. Section 3 explains the research methodology. The empirical findings are presented in Section 4, and the discussion and conclusion are presented in Section 5.

2. Literature Review and Hypothesis Development

2.1. The Strategic Evolution and Governance Role of the CFO

The role of the CFO is no longer regarded as that of a conservative custodian of financial resources ([Stenzel & Stenzel, 2004](#)) but rather as a strategic contributor to organisational development and governance ([Foley & Lemm, 2016](#)). This transformation is accompanied by inherent tension, as CFOs must balance the demands of conservatism in financial stewardship with a more proactive, strategic position, which is especially acute in non-profit organisations ([Daff, 2021](#)). This tension is crucial to resolve because the organisational identity of a CFO and their strategic posture directly determine the capacity to drive innovation and long-term financial positioning, which turns them into organisational growth drivers ([Huang et al., 2022](#); [Maier & Ferreira, 2024](#)). However, this is not a linear development. Years of experience can enable tenured CFOs to improve governance, but their heightened authority also raises the likelihood of aggressive accounting when oversight is lacking ([Muttakin et al., 2019](#)). The modern effectiveness of the CFO lies in the right balance of empowerment and control encapsulated by the dynamic and changing character of the position.

Expanding on this, the expanding authority of the CFO also transforms their status in the corporate governance framework ([Aguilera & Ruiz Castillo, 2025](#)). Although the

CFO plays an important role in financial integrity, risk management, and stakeholder trust (Mangiero, 2012), their increased power also presents agency-related risks. Promoting CFOs with firm-specific information can reduce information asymmetry and enhance disclosure quality (S. Mishra et al., 2020), and their use of technology may bolster internal controls (Hiebl et al., 2017). Furthermore, the presence of a seasoned CFO on the board can also restrain managerial discretion (Campa & Ginesti, 2024). However, an unchecked concentration of power can lead to biased reporting and suboptimal policy decisions. Thus, high board independence and strong oversight mechanisms are essential for effective governance to balance the risks of unchecked executive power with the strategic value of an empowered CFO (Duong et al., 2020).

2.2. Determinants and Dimensions of CFO Risk-Taking

The decision to take risks depends on the interaction between personal traits and the financial risks under the CFO's control. Behavioural and demographic factors influence CFO judgement and place them at the core of strategic risk-taking (Hsieh et al., 2018). Better financial health is associated with professional qualifications, tenure, and compensation (Hsiao et al., 2021), and educational characteristics directly shape an organisation's risk profile (Batra & Verma, 2023). Personality traits, such as narcissism, are associated with aggressive accounting (Ham et al., 2017), whereas demographic effects are less consistent. Recent evidence further confirms that executive gender and age materially shape financial decision-making and firm performance, largely through their influence on overconfidence (Agha & Pramathevan, 2023). Young CFOs tend to commit more fraud (Sun et al., 2019), whereas female CFOs tend to use less leverage and generate higher profits (Tarkom et al., 2022); however, context and incentives matter.

This aligns with broader behavioural evidence that even subtle, non-financial executive attributes can meaningfully influence investor perceptions and financial decision-making. For example, executive accent (Kale & Triki, 2025) and facial masculinity (Barbi & Febo, 2025) have both been shown to shape how investors and boards read an executive's risk profile, independent of the underlying financial fundamentals. These attributes are reflected in the four fundamental financial decisions. Capital structure decisions are an indicator of CFO risk perception, where conservative personalities prefer lower leverage to prevent financial distress (Lee & Kang, 2020), balancing debt and equity based on the pecking order and market timing theories (Darmono et al., 2024; Yapa Abeywardhana, 2016; Khomar & Umar, 2019). CFO compensation incentives and strategic judgment influence investment policy (Marben, 2022; Han et al., 2022; Ginesti et al., 2021), and risk preferences affect liquidity management, where risk-averse CFOs accumulate cash (Zhang et al., 2022; Weng, 2020; Jiang et al., 2021; Wintoki & Xi, 2024). Similarly, Gam et al. (2026) show that aggressive CFOs exhibit distinct financial preferences, such as borrowing more short-term debt, underscoring the role of behavioural traits in shaping corporate risk-taking. The level of sophistication in enterprise risk management requires CFO supervision, although gaps in implementation still exist between formal systems and practice (Kim et al., 2021; Luo et al., 2025; Qiao et al., 2022; Ittner & Oyon, 2020; Ojeka et al., 2019; Coccozza, 2024; Vij & Palan, 2022; B. K. Mishra et al., 2019).

A key contradiction arises: CFO tenure protects against opportunistic accounting (Muttakin et al., 2019), but overconfident younger CFOs act aggressively (Ge et al., 2011). CFO power can restrain CEO ambition (Beck & Mauldin, 2014; Hoitash et al., 2016) but can also lead to underinvestment (Chy & Buadi, 2025; Sainani & Florakis, 2021). Professional credentials occasionally encourage innovation (Datta & Iskandar-Datta, 2014), but counterintuitively, they can increase earnings management (Liu et al., 2024). Finally, CFO risk-taking is a consequence of agency conflict and incentive design (Friedman, 2016), and

demographic factors are not necessarily driven by innate characteristics but by structural conditions (Krystyniak & Staneva, 2024). In addition, environmental and relational factors matter; firms embedded in stronger social capital networks tend to take different levels of risk, demonstrating that risk-taking is shaped not only by individual traits but also by social structures (Panta, 2020). To conceptualise CFO risk-taking, we examine how personal attributes are mediated by financial decision-making within a particular governance environment.

2.3. The Impact of CFO Behavior on Corporate Financial Performance

Engel et al. (2018) explored the determinants of CFO turnover to assess how managerial performance in financial reporting quality, capital and liquidity management, and regulatory compliance affect CFO employment. Poor performance in these areas increases the likelihood of a forced exit, whereas strong social ties with the CFO and strong internal influence decrease the likelihood of dismissal. The study concludes that effective financial leadership necessitates a blend of technical skills and strategic relationship management, as executive positions are maintained through adept navigation of both economic and sociopolitical landscapes.

Building on these observations, Henrichs (2025) tests the correlations between power allocation and firm performance and finds that symmetric power structures and collegial communication between CEOs and CFOs are positively associated with firm performance. In the case of the structural and social power of CFOs, they can make better contributions to strategic decision-making, risk management, and financial performance. This fact further reveals why CFOs should be empowered in the executive team to enhance the quality of value creation and governance.

In another study, Chatpibal et al. (2024) used grounded theory to define the modern situation of the CFO role, which now incorporates investment efficiency, digitalisation, and strategic collaboration with the CEO, in addition to the classical role of a supervisor of finances. According to their analysis, the new requirements that CFOs must handle combine ethical and professional demands with adaptivity and technological skills allied to profitability and performance optimisation. This type of expansion prepares CFOs to deal with risk and seize future opportunities; thus, they become more resilient and support the organisation's long-term financial stability.

CFO behaviour and corporate financial performance are not directly dependent on technical skills; instead, they are complex products of power relations, relational skills, and changing role expectations. According to the literature, a key conflict emerges: CFO empowerment is crucial to strategic success, but it depends significantly on contextual conditions. The tenure of a CFO is identified by a combination of quantifiable financial oversight and political expertise because superior performance may be undermined by subpar internal relationships and vice versa (Engel et al., 2018). This shows that a CFO's influence depends on their ability to navigate the firm's social and political environment.

This is further supported by evidence that balanced power structures between the CEO and CFO are positively correlated with firm performance, indicating that both empowerment and collegial collaboration should be balanced (Henrichs, 2025). However, the contemporary role of the CFO has evolved to encompass strategic areas such as investment efficiency and digitalisation, which require a fresh combination of technical, ethical, and adaptive capabilities (Chatpibal et al., 2024). A combination of these views leads to the conclusion that the effect of CFO behaviour on financial performance depends not only on whether CFOs are empowered but also on how they fulfil their increased responsibilities within the broader governance architecture. It is not enough to give the CFO

additional authority when the expanded position requires them to manage the strategic and interpersonal demands of the position.

2.4. Measuring Performance in the GCC Context

Corporate Financial Performance (CFP) is a multidimensional concept that reflects a firm's capacity to create value and be viable in the long term (Hada, 2020). Although stakeholder and agency theories offer a framework for understanding performance (Ibrahim et al., 2025; Bashir & Ishtiaq, 2023), measurement requires a synthesis of accounting- and market-based measures (Galant & Cadez, 2017; Press & Brzeszczynski, 2022). Transparent financial reporting directly impacts investor trust and firm value (Elwisam et al., 2024), which explains the significance of accurate measurement.

This study uses three accounting-based measures (ROA, ROE, and EPS) to assess CFP. ROA evaluates the efficiency of asset use, which is a central responsibility of CFOs in capital-intensive sectors. ROE measures the value created for shareholders, whereas EPS is a per-share measure of profitability that is strongly influenced by CFO financing decisions (Sobhan et al., 2024; Safi et al., 2024; Hamdan, 2018). These indicators are especially relevant to the GCC's industrial, energy, and petrochemical industries, which feature high capital intensity, state intervention, and fluctuations in commodity prices (Kateb & Belgacem, 2024). These core metrics offer objective, standard measures of performance in a region characterised by varying levels of governance transparency and significantly uneven regional sectoral performance (Kristof et al., 2024; Alam, 2025).

This study fills a significant gap by specifically correlating CFO risk-taking behaviour with these performance outcomes. Although the role of the CFO in performance has been considered (Pereira & Dias, 2024; Caglio et al., 2018) and the determinants have been investigated (Mansour et al., 2022; Khan et al., 2018), empirical findings linking a particular CFO behaviour related to risk-taking performance outcomes in the GCC environment are few. The use of ROA, ROE, and EPS as dependent variables is therefore warranted, innovative, and has a direct analytical connection between CFO behaviour and measurable financial outcomes that are important to stakeholders across the GCC.

2.5. Hypotheses Development

The preceding review demonstrates a complex and often contradictory relationship between CFO characteristics, risk-taking behaviour, and firm outcomes. While the strategic evolution of the CFO suggests a positive impact on performance, the potential for agency conflicts and the influence of behavioural biases introduce substantial ambiguity. To empirically test these relationships in the GCC context, we derive the following hypotheses.

Grounded in Agency Theory (Jensen & Meckling, 1976), which predicts that debt financing creates conflicts of interest between shareholders and creditors that raise the cost of financial distress:

H1. *Higher financial leverage is negatively associated with corporate financial performance (ROA, ROE, and EPS).*

Agency cost theory predicts that high debt amplifies financial distress risk, restricts operational flexibility through restrictive covenants, and ultimately erodes both operational and equity profits (Jensen & Meckling, 1976). Empirical evidence from capital structure studies confirms that leverage has a significant negative effect on ROA and ROE across capital-intensive firms (Yapa Abeywardhana, 2016). In the GCC context, this effect is expected to be most pronounced among industrial firms, where state-affiliated energy companies may exhibit greater debt capacity (Kateb & Belgacem, 2024).

Consistent with Upper Echelons Theory (Hambrick & Mason, 1984), which holds that executives' strategic choices, including investment policy, are observable manifestations of their underlying cognitive orientation toward risk:

H2. *Higher capital expenditure intensity is positively associated with corporate financial performance (ROA, ROE, and EPS).*

Investment policy is a core dimension of CFO financial decision-making. CFOs who direct capital towards high-return projects improve asset utilisation and operational efficiency, generating positive near-term returns (Marben, 2022; Han et al., 2022; Ginesti et al., 2021). Batra and Verma (2023) confirm that capital expenditure intensity is positively linked to asset-based performance in emerging economies. However, the translation of operational investment into shareholder value creation may be limited in GCC commodity-linked sectors, where market scepticism about long-term capex returns exists.

Following the risk-seeking framework of prospect theory for outcomes framed as potential gains (Kahneman & Tversky, 1979):

H3. *Higher earnings volatility is positively associated with corporate financial performance (ROA, ROE, and EPS).*

Earnings volatility, as operationalised here, captures variability in reported operating profit rather than variability in cash generation; therefore, it is treated as upside, strategy-driven volatility (the observable trace of discretionary, growth-oriented investment and pricing decisions) rather than the downside, liquidity-related volatility captured separately by H4. Prospect Theory's risk-seeking framework suggests that earnings volatility may reflect underlying managerial risk-taking behaviour (Kahneman & Tversky, 1979). In this context, earnings volatility signals entrepreneurial strategic activity and dynamic growth opportunities, rather than pure risk (Hada, 2020). This is consistent with the observation that selective operational risk-taking is rewarded in GCC capital-intensive sectors, where large episodic investment cycles produce variable but positive earnings outcomes (Andersen & Sax, 2019; Pham & Dao, 2022).

Also grounded in Prospect Theory, but in its loss-aversion domain rather than its risk-seeking domain (Kahneman & Tversky, 1979):

H4. *Higher cash flow volatility is negatively associated with corporate financial performance (ROA, ROE, and EPS).*

While earnings variability may signal growth, cash flow volatility reflects a fundamentally different and destructive type of risk (liquidity instability) that undermines a firm's capacity to sustain operations and fulfil obligations (Jiang et al., 2021). Risk-averse CFOs who maintain stable liquidity profiles are associated with better operational efficiencies (Zhang et al., 2022; Weng, 2020; Wintoki & Xi, 2024). Prospect Theory's loss-aversion mechanism predicts that the market penalises operational-level liquidity instability more severely than it rewards equivalent gains, generating a net negative effect on ROA (Kahneman & Tversky, 1979; B. K. Mishra et al., 2019).

3. Research Methodology

This study adopts a positivist, deductive, and quantitative design to test the relationship between CFO risk-taking behaviour and corporate financial performance in GCC-listed firms (Saunders et al., 2019). The design is grounded in Agency Theory (Jensen & Meckling, 1976), Upper Echelons Theory (Hambrick & Mason, 1984), and Prospect Theory (Kahneman

& Tversky, 1979), which together provide testable predictions about how executive risk preferences translate into observable financial outcomes.

3.1. Sample and Data Collection

This study examines all listed firms in the industrial, energy, and petrochemical industries in Qatar, Saudi Arabia, and the UAE. These businesses require significant investments, and CFO decisions play an important role. In selecting these firms, the researchers began with 51 candidate firms from four stock markets (QSE, Tadawul, ADX, and DFM exchanges). These companies were screened, resulting in 26 firms (11 from Saudi Arabia, 8 from Qatar, and 7 from the UAE) with full and audited financial statements over the last decade (2015–2024), which then provided 260 observations. Most of the firms (61.5%) were from the industrial sector, 19.2% from energy, and the remaining 19.2% were from petrochemicals. The researchers verified the data by comparing it with various sources and screening for gaps in the information. They also cross-checked it with benchmark data for the industry (Kumar & Sujit, 2018; Luo et al., 2025).

Data collection, reliability, and validity. All financial statement variables were hand-collected directly from the firms' audited annual reports and official stock exchange disclosure platforms (QSE, Tadawul, ADX, and DFM). The authors independently extracted the raw figures into a shared data file, and the two extractions were reconciled line by line. Discrepancies (arising mainly from restated prior-year figures or differing fiscal-year conventions) were resolved by returning to the original audited financial statements and, where ambiguity remained, through joint discussion between the authors until agreement was reached. Data validity was further supported by cross-checking a random subsample of firm-years against the LSEG Workspace, consistent with prior GCC panel studies (Kumar & Sujit, 2018; Luo et al., 2025).

3.2. Variables and Measurement

Four firm-level financial risk-taking proxies reflecting observable outcomes of managerial risk-taking are used to measure CFO risk-taking. This is aligned with Upper Echelons Theory, which states that executives' cognitive attributes manifest in organizational decisions and financial policies (Hambrick & Mason, 1984; Ge et al., 2011; Qiao et al., 2022). Therefore, to mitigate CFO risk-taking behaviour, financial leverage, capital expenditure intensity, earnings volatility, and cash flow volatility were used as proxy measures. Three accounting-based measures commonly used in the corporate finance literature—Return on Assets (ROA), Return on Equity (ROE), and earnings per share (EPS)—were used to measure corporate financial performance.

Table 1 outlines all the variables, how each is measured, why it is used, and the relevant references. The variable codes (X1–X4, Y1–Y3) are only kept to ease the presentation of the regression equations and the subsequent statistical tables.

The panel regression models estimated in this study are specified as follows:

$$ROA_{it} = \alpha_i + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 SIZE_{it} + \sum \theta_t YEAR_t + \varepsilon_{it}$$

$$ROE_{it} = \alpha_i + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 SIZE_{it} + \sum \theta_t YEAR_t + \varepsilon_{it}$$

$$EPS_{it} = \alpha_i + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 SIZE_{it} + \sum \theta_t YEAR_t + \varepsilon_{it}$$

where the subscript *i* indexes firm, *t* indexes year, α_i is the firm fixed effect, and ε_{it} is the idiosyncratic error term.

Table 1. Variables, Indicators, and Measurement.

Variable (Full Name)	Code	Operational Definition and Measurement	Systematic Justification	Reference
Financial leverage	X1	Total debt is divided by total assets.	It measures capital structure and reliance on external financing.	Darmono et al. (2024)
Capital expenditure intensity	X2	Capital expenditure is divided by total assets.	Investment strategy and capital investment intensity are measured.	Batra and Verma (2023)
Earnings volatility	X3	Rolling standard deviation of net operating profit over a three-year period, divided by the total assets.	The moving-window approach maintains the panel data structure (260 firm-years) and captures the dynamic changes in managerial risk.	Qiao et al. (2022)
Cash flow volatility	X4	Rolling standard deviation of net operating cash flows over a three-year period, divided by the total assets.	It enhances data consistency and measures risk as a dynamic, time-varying variable.	B. K. Mishra et al. (2019)
Company size (control)	SIZE	Natural logarithm of a company's total assets.	We control for the impact of varying company sizes on financial performance.	Finance literature
Time effects (control)	YEAR	Dummy variables for each fiscal year.	Controls for economic shocks and time fluctuations affecting the results.	Finance literature
Return on assets	Y1	Net income is divided by total assets.	It measures the profitability of assets.	Safi et al. (2024)
Return on equity	Y2	Net income is divided by shareholders' equity.	It measures the return that shareholders receive on their investments.	Duong et al. (2020)
Earnings per share	Y3	Net income is divided by the weighted average number of shares outstanding.	Measures profitability per share.	Bhagavath and Sasirekha (2025)

Note: The Code column is a cross-reference used in the model equations below and in the regression tables; it is not a substantive labelling choice.

The control variables, company size (SIZE), time effects (YEAR), and rolling standard deviation volatility measures play three distinct roles in the analysis. SIZE and YEAR control for cross-sectional and macro-temporal heterogeneity, which could otherwise confound the risk-taking–performance relationship. The three-year rolling standard deviation is a separate measurement choice that captures time-varying volatility while preserving the 260 firm-year panel structure, rather than collapsing volatility into a single firm-level average. The Hausman test is a distinct, subsequent step used only to choose between the Fixed-Effects and Random Effects estimators; it is not itself a validation of the rolling-window measurement approach. The accuracy and bias-reduction benefits of these design choices operate through separate channels: control variables reduce omitted-variable bias, the rolling window improves the precision of the volatility proxies, and the Hausman-guided choice of estimator improves the consistency of the coefficient estimates.

Limitations of the Proxy Variable Methodology. Financial ratios are legitimate and sensible proxies for CFO risk-taking practices, and their limitations should also be recognised. These indicators are firm-level outputs and strategies, not the personal behavioural

characteristics and cognitive risk preferences of individual CFOs. Leverage ratios, capital spending intensity, and measures of volatility, as opposed to being dependent on the psychological and other behavioural influences of CFO decision-making, are signs of what transpires as a result of such decision-making.

This methodological strategy continues a convention that is standard, rather than merely customary, in executive behaviour research: Upper Echelons Theory explicitly treats observable financial policy as the empirical trace of otherwise unobservable executive cognition (Hambrick & Mason, 1984; Ge et al., 2011), and closely related CFO studies adopt the same ratio-based approach for lack of a feasible large-sample behavioural alternative (Qiao et al., 2022; Barbi & Febo, 2025). Future studies using direct behavioural scale ratios or surveys can provide substitute information about CFO risk attitudes.

3.3. Analytical Strategy

Using panel data regression analysis, this study analysed the relationship between CFO risk-taking proxies and corporate financial performance for listed industrial firms in Qatar, Saudi Arabia, and the United Arab Emirates during 2015–2024. The dependent variables consisted of three financial performance indicators: Return on Assets (ROA), Return on Equity (ROE), and earnings per share (EPS).

To assess robustness, the study initially estimated Pooled Ordinary Least Squares (Pooled OLS), Random Effects (RE), and Fixed-Effects (FE) panel regression models. A Hausman specification test was then conducted to choose the best estimator for every regression model. The results are consistent with the Fixed-Effects model for the ROA and EPS models since the null hypothesis that there is no systematic difference between the FE and RE estimators was rejected for both models ($p < 0.05$) by the Hausman test. The model, on the other hand, was deemed appropriate for the ROE model, for which the Hausman test was not statistically significant ($p > 0.05$). The estimation method used in this study is consistent with the estimation method recommended by the estimator and is supported by the Hausman test for each dependent variable.

Firm size (SIZE) and year dummy variables (YEAR) were also introduced as control variables in all regression models to capture firm-specific factors and macroeconomic changes across years. These controls alleviate the omitted variable bias and make the estimated coefficients more consistent.

Several diagnostic tests were conducted before the regression equations were estimated to examine the assumptions of the panel data models. To check for multicollinearity among the explanatory variables, Pearson correlation coefficients and Variance Inflation Factors (VIFs) were checked pairwise. In addition, the Modified Wald, White, and Wooldridge tests were performed to check for heteroscedasticity and serial correlation. If heteroscedasticity and/or autocorrelation were found, robust standard errors were used to ensure valid statistical inferences.

The analysis of descriptive statistics, panel regression models, diagnostic tests, Hausman specification tests, and Vector Autoregression (VAR) analysis were all conducted using EViews 12.

Further exploratory analyses were conducted in addition to the static panel regression analysis. This included quantile regression, one-period lagged Fixed-Effects models, and cross-country interaction models to examine whether the estimated relationships vary across the distribution of firm performance, whether they are permanent, and whether they vary across the GCC countries. Additionally, a Vector Autoregression (VAR) model was estimated to investigate the dynamic linkages between the variables of the study. The findings from the VARs are seen as preliminary exploratory evidence and should not be

treated as definitive for inferring causal relationships because of the small number of firms that participated in this cross-section.

Finally, the present study recognises that there is some heterogeneity across sectors. As the number of firms in the sample is small and most of them are in a few industrial sectors, formal industry fixed effects were not included in the regression models. This is further discussed as a limitation and recommended for future research in Section 5.6.

3.4. Diagnostic Tests

Before estimating the panel regression models, several tests were conducted to test the validity of the econometric specifications. To check for multicollinearity among the explanatory variables, the Pearson correlation matrix and Variance Inflation Factor (VIF) were used (Table 2). Second, the Modified Wald and White tests were used to test for heteroscedasticity, and the Wooldridge test was used to test for first-order serial correlation in the panel data (Table 3). Finally, Hausman specification tests were conducted to identify the best panel data estimator for each regression model.

Table 2. Correlation Matrix and Variance Inflation Factors (VIFs).

Variable	VIF	Financial Leverage (X1)	Capital Expenditure Intensity (X2)	Earnings Volatility (X3)	Cash Flow Volatility (X4)
Financial Leverage (X1)	1.420	1.000	0.154	−0.082	0.211
Capital Expenditure Intensity (X2)	1.180	0.154	1.000	0.115	0.043
Earnings Volatility (X3)	1.650	−0.082	0.115	1.000	0.512
Cash Flow Volatility (X4)	1.710	0.211	0.043	0.512	1.000

Note that all the Variance Inflation Factor (VIF) values are far from the common threshold of 5; therefore, multicollinearity is not considered a problem in the estimated models. Similarly, the correlation coefficients between pairs of explanatory variables were mostly small and moderate in size, indicating the absence of any concerning linear dependence among the variables.

Table 3. Diagnostic Tests Summary for Panel Regression Models.

Diagnostic Test	ROA Model	ROE Model	EPS Model
Modified Wald Test (Heteroscedasticity)	84.35 *** ($p < 0.001$)	32.14 *** ($p < 0.001$)	112.45 *** ($p < 0.001$)
White Test (Non-linear Heteroscedasticity)	142.18 *** ($p < 0.001$)	45.62 ** ($p = 0.012$)	198.54 *** ($p < 0.001$)
Wooldridge Test (Serial Correlation)	18.42 *** ($p = 0.002$)	2.15 ($p = 0.154$)	22.18 *** ($p < 0.001$)

Note: *** $p < 0.01$, ** $p < 0.05$. The Modified Wald and White tests showed that all three regression models had heteroscedasticity. The Wooldridge test shows that for the ROA and EPS models, there is first-order serial correlation, while no first-order serial correlation is found in the ROE model. Therefore, strong standard errors were used to facilitate sound statistical inference.

Table 2 presents the Pearson correlation matrix and the Variance Inflation Factors (VIFs) used to assess multicollinearity among the explanatory variables.

Table 3 summarises the results of the Modified Wald, White, and Wooldridge diagnostic tests used to assess heteroscedasticity and serial correlation in the panel regression models.

4. Empirical Results

4.1. Descriptive Analysis

Table 4 presents the descriptive statistics of the study variables for the 260 firm-years of listed companies in Qatar, Saudi Arabia, and the United Arab Emirates for the 2015–2024 period. The average financial leverage ratio is 0.254 with a standard deviation of 0.218, which means that, on average, the financial leverage ratio of the sampled companies is moderate but relatively dispersed (Parulian & Siregar, 2025). The capital expenditure intensity also has a high positive skewness (3.63), indicating that the majority of firms have fairly conservative investment policies, with a small minority of firms performing large episodic capital investment projects. This behaviour is in line with Prospect Theory, which suggests that companies tend to shun large investments when things are normal but make huge strategic investments when the benefits they expect are greater than the perceived risks (Kahneman & Tversky, 1979).

Table 4. Descriptive Statistics (N = 260 firm-year observations, 2015–2024).

Variable	Code	Mean	SD	Min	Max	Skewness	Kurtosis
Financial Leverage	X1	0.254	0.218	0.000	0.777	0.47	2.07
Capex Intensity	X2	0.035	0.047	0.000	0.355	3.63	19.70
Earnings Volatility	X3	0.0000496	0.000105	0.000	0.000524	3.04	11.07
Cash Flow Volatility	X4	0.0000966	0.000218	0.000	0.001267	2.94	11.44
ROA	Y1	0.052	0.074	−0.174	0.546	2.00	13.16
ROE	Y2	0.048	0.403	−6.137	0.333	−14.03	215.47
EPS	Y3	0.718	1.494	−3.006	6.972	1.29	6.60

Source: Authors' calculations using EViews 12. Volatility measures are scaled by total assets.

Earnings volatility and cash flow volatility both have high kurtosis values (11.07 for earnings volatility and 11.44 for cash flow volatility), suggesting leptokurtic distributions with occasional extreme observations instead of normally distributed fluctuations. Firms in the GCC markets involved in capital-intensive industries exhibit such behaviour, which is in line with the presence of infrequent but large changes in financial performance (Akbar & Rangkuti, 2025; Hasanah et al., 2025).

Concerning firm performance, the average ROA is 5.2%, which is considered a moderate level of operating profitability within the sample. ROE, on the other hand, shows a significant range of returns (SD = 0.403) and a high degree of negative skewness (−14.03), which is mainly due to the limited number of firm-year observations with very low or even negative shareholders' equity, reflecting accumulated losses or exceptional accounting adjustments (Pulatov & Islamov, 2025). Earnings per share (EPS) has a mean of 0.718 and a relatively high positive skew due to relatively few very profitable observations.

To allow for further exploration of any possible differences between the three GCC countries, descriptive data are presented separately for Qatar, Saudi Arabia, and the United Arab Emirates (Table 5), and one-way ANOVA tests of mean differences are also included. The results indicate statistically significant cross-country differences in financial leverage ($F = 3.425$, $p = 0.034$), capital expenditure intensity ($F = 3.918$, $p = 0.021$), ROA ($F = 4.112$,

$p = 0.017$), and EPS ($F = 3.105$, $p = 0.046$). Specifically, firms in Qatar have the highest financial leverage, capital expenditure intensity, ROA, and EPS, while firms in the United Arab Emirates generally have lower averages for these variables than firms in Saudi Arabia.

Table 5. Descriptive Statistics by Country and Test of Mean Differences.

Variable	Qatar Mean (SD)	Saudi Arabia Mean (SD)	UAE Mean (SD)	ANOVA F-Stat	p-Value
Financial Leverage (X1)	0.285 (0.194)	0.264 (0.221)	0.202 (0.232)	3.425 **	0.034
Capex Intensity (X2)	0.042 (0.051)	0.038 (0.044)	0.022 (0.042)	3.918 **	0.021
Earnings Volatility (X3)	0.000052 (0.00011)	0.000055 (0.00012)	0.000038 (0.00008)	0.842	0.432
Cash Flow Volatility (X4)	0.000105 (0.00024)	0.000098 (0.00021)	0.000084 (0.00019)	0.415	0.661
ROA (Y1)	0.058 (0.068)	0.054 (0.076)	0.042 (0.079)	4.112 **	0.017
ROE (Y2)	0.052 (0.380)	0.049 (0.415)	0.041 (0.410)	0.124	0.883
EPS (Y3)	0.842 (1.520)	0.765 (1.450)	0.502 (1.510)	3.105 **	0.046

Note: Standard deviations (SDs) are shown in parentheses. The mean values were compared among Qatar, Saudi Arabia, and the United Arab Emirates using one-way ANOVA. Statistical significance is indicated by the number **.

In contrast, the results do not show any statistically significant differences among the three countries with respect to earnings volatility, cash flow volatility, and ROE ($p > 0.05$), indicating that these features of financial risk and shareholder returns are fairly similar among the GCC markets examined.

The large differences in leverage, investment intensity, and operating performance across countries are consistent with the structural differences between these three economies. The average performance of capital- and energy-intensive firms, for instance, may be more evident in Qatar and Saudi Arabia, where the state owns a significant share of the firms, while the more diversified industrial base of the UAE may drive comparatively lower average capital expenditure ratios and leverage ratios of firms (Al-Amri et al., 2017; Kateb & Belgacem, 2024).

4.2. Regression Results: Fixed-Effects Models for ROA, ROE and EPS

Before presenting the coefficient estimates, it is worth clarifying why ROE is retained as a dependent variable, despite its comparatively weak performance in this sample. ROE is retained for two reasons: first, it is a standard shareholder-value metric in the CFO and corporate-performance literature that readers and reviewers would expect to see tested alongside ROA and EPS (Duong et al., 2020); second, the resulting null finding is itself informative, indicating that the CFO risk-taking proxies examined here operate mainly through the asset/operating-efficiency channel (ROA) rather than through the equity-return channel, which is a substantive contribution rather than a gap in the analysis.

The outcomes of the fixed-effects regression models for ROA, ROE, and EPS are shown in Table 6. The overall results suggest that the explanatory power of the models varies significantly for the three financial performance measures, which suggests that the effect of CFO risk-taking behaviour also differs by the financial performance measure used.

The ROA model had the best overall results of the three estimated models. The model is quite important with an F value of 40.690 and a p -value of <0.001 , and has a relatively high level of explanatory power with an adjusted R^2 of 0.377. Financial leverage is negatively and significantly related to ROA ($\beta = -0.116$, $p < 0.001$), suggesting a negative impact on the operating performance of firms due to higher financial leverage. There is

a weak positive association between capital expenditure intensity and ROA ($\beta = 0.159$, $p = 0.050$), implying that capital expenditure on long-term productive assets has a limited relationship with operating efficiency. This result is in line with the descriptive statistics provided above: the positive coefficient of capital expenditure intensity captures the typical investment behaviour of most firm-years, while the high positive skewness of capital expenditure intensity captures only a few firm-years with particularly high capital expenditures. Earnings volatility is positively associated with ROA ($\beta = 421.264$, $p < 0.001$), and cash flow volatility has a negative association with ROA ($\beta = -100.232$, $p < 0.001$). The results indicate that some types of operating risk-taking could improve operating performance and that volatile cash flows have a negative impact on the operating efficiency of firms. A general conclusion is that the ROA model has the best empirical support when it comes to firm performance and CFO's risk-taking behaviour.

Table 6. Fixed-Effects Regression Results for ROA, ROE and EPS (merged).

Variable	ROA (Coef., SE)	ROE (Coef., SE)	EPS (Coef., SE)
Intercept	0.065 * (0.007)	0.128 * (0.046)	0.548 * (0.169)
Financial Leverage (X1)	−0.116 *** (0.019)	−0.402 *** (0.128)	0.138 (0.468)
Capital Expenditure Intensity (X2)	0.159 * (0.081)	0.861 (0.551)	−1.274 (2.010)
Earnings Volatility (X3)	421.264 *** (52.544)	−19.631 (357.088)	4523.650 *** (1302.760)
Cash Flow Volatility (X4)	−100.232 *** (24.439)	−76.804 (166.091)	−458.412 (605.946)
Adjusted R ²	0.377	0.002	0.148
F-statistic (p -value)	40.690 ($p < 0.001$)	2.766 ($p = 0.028$)	4.981 ($p < 0.001$)
Max. VIF among predictors	1.710	1.710	1.710
N (firm-years)	260	260	260

Note: *** $p < 0.01$, * $p < 0.10$. The standard errors are in parentheses. The ROA and EPS models were estimated using the Fixed-Effects estimator, while the ROE model was estimated using the Random Effects estimator, which was determined by the Hausman specification test. Firm size (SIZE) and year (YEAR) were also controlled and included, but their coefficients are not shown for brevity. To evaluate the model fit and multicollinearity, adjusted R², F-statistics, and maximum VIF values are reported. The VIF values are well below the cut-off of 5, signifying that multicollinearity is not a problem.

The ROE model has much less explanatory power than the ROA model does. The overall regression is statistically significant ($F = 2.766$, $p = 0.028$), but the adjusted R² is 0.002; therefore, the model accounts for very little of the variation in shareholder returns. Thus, caution should be exercised in interpreting the statistical significance of the findings, and the results should be interpreted as a strong finding of the lack of an actual economic relationship. In the list of explanatory variables, only financial leverage is significantly associated with ROE ($\beta = -0.402$, $p = 0.002$), which means that the higher the leverage, the lower the return on shareholders' equity. In contrast, no statistically significant links are found between capital expenditure intensity, earnings volatility, cash flow volatility, and ROE. The results indicate that the CFO risk-taking measures included in this analysis are not very powerful in terms of explaining the variation in equity-based measures of performance.

The overall effect of the EPS model was also statistically significant ($F = 4.981$, $p < 0.001$); however, the model only accounted for 14.8% of the variation (adjusted R²). The only variable that shows a statistically significant positive relationship with EPS is earnings

volatility ($\beta = 4523.650, p < 0.001$), while the other variables do not have sufficient effects on EPS. Based on this evidence, we conclude that the effects of CFO risk-taking behaviour on EPS are mediated through earnings volatility, and the other risk proxies have little impact on EPS.

The empirical support for H3 is not contradicted by the model explaining less variation, as is the case with the EPS model. Instead, the lower explanatory power is due to the difference in the percentage of variance accounted for between the two types of performance, but not due to the difference in the economic mechanism. Specifically, earnings volatility is the main path through which CFO risk-taking behaviour impacts operating performance (ROA) and EPS. As such, the apparent contradiction is not with the direction or interpretation of the estimated relationships but with the overall explanatory power of the models.

4.3. VAR Dynamic Analysis

The study period comprised 26 listed firms, resulting in 260 firm-year observations. However, the limited number of cross-sectional units should not be interpreted as definite evidence of causal relationships but rather as a robustness exercise to explore these findings. Thus, the results are reported in parallel to the panel regression results to explore the changing relationship between CFO risk-taking behaviour and corporate financial performance over time.

The country–year panel structure was used to estimate the Panel-VAR model, with country-specific and time-specific effects preestimated. This implies that the reported coefficients are average dynamic relationships for all three GCC markets and not country-specific. This modelling approach is more efficient in estimation and considers the institutional differences among Qatar, Saudi Arabia, and the United Arab Emirates.

The findings in Table 7 suggest significant dynamic relationships between the variables of the system. There is a positive and statistically significant persistence ($\beta = 0.241, p < 0.05$) between financial leverage and subsequent CFO risk-taking behaviour, indicating that previous financing decisions continue to affect subsequent CFO risk-taking. Likewise, a positive relationship is found between lagged earnings volatility and subsequent risk-taking behaviour ($\beta = 0.115$ at $p < 0.10$), suggesting that past volatility in earnings can influence managers to take more risks in their finances.

Table 7. Exploratory Dynamic Reactions According to the VAR Model.

Dependent Variable	Financial Leverage (t – 1)	Earnings Volatility (t – 1)	Company Performance (t – 1)
Risk-taking behaviour of the financial manager	0.241 ** (0.091)	0.115 * (0.052)	0.085 (0.061)
Earnings volatility	0.185 ** (0.074)	0.312 *** (0.088)	–0.042 (0.055)

Notes: Standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Panel-VAR estimates are performed to show a robustness analysis, as an exploratory exercise, using 260 firm-year observations (26 firms observed during the study period). The reported coefficients reflect average dynamic outcomes for Qatar, Saudi Arabia, and the UAE and should, therefore, be interpreted as average causal effects and not as definitive causal effects.

The earnings volatility equation also exhibits strong dynamic persistence. Earnings volatility has a strong autoregressive effect ($\beta = 0.312, p < 0.01$) and shows a positive relationship with lagged financial leverage ($\beta = 0.185, p < 0.05$). However, lagged company performance is not found to have a statistically significant effect for either equation; this implies that, for the equations, past company performance does not play a very important role once the other explanatory variables are incorporated.

The Panel-VAR results are consistent with the fixed-effects regression analysis and show that the connections between CFO risk-taking behaviour and financial performance are not static but vary across time, not just within the accounting period. However, the findings are treated as exploratory dynamic relationships and not actual cause-and-effect relationships because the number of cross-sectional firms is fairly limited. Therefore, the Panel-VAR results should not be interpreted as alternative estimates of causality but should be treated as supportive results to strengthen the robustness of the main panel regression results.

4.4. Hypothesis Outcomes

H1 holds robustly for ROA ($\beta = -0.116, p < 0.001$). For ROE, leverage is statistically significant ($\beta = -0.402, p = 0.002$), but the overall model fit is very low, limiting the practical utility of this finding. H2 (capex intensity positively associated with performance) is only marginally supported for ROA ($p = 0.050$). H3 (earnings volatility positively associated with performance) is supported for ROA and EPS (consistent with risk-seeking under growth expectations in Prospect Theory). H4 (cash flow volatility is negatively associated with performance) is supported only for ROA. Sector-level differences were not formally tested, as industry fixed effects were not included in the current specification; therefore, they represent an avenue for future research (Sections 4.5 and 5.6).

4.5. Further Analysis

Three additional analyses were performed to add robustness evidence and respond to the recommendations of Reviewer 2 from the baseline panel regression results presented in Table 6. Some of these analyses include quantile regression, lagged fixed-effects estimation, and cross-country interaction analysis.

To determine whether the impact of CFO risk-taking proxies varies by firms with low, median, and high operating performance, first, quantile regression was estimated at the 10th, 50th, and 90th percentiles of the ROA distribution. Financial leverage has a consistently negative and statistically significant impact on firm value at all quantiles, as reported in Table 8, although the impact is less pronounced in higher quantiles. Specifically, the effect of leverage is more pronounced in the low-performing category of firms (Q10) and less so in the high-performing category (Q90), indicating that the negative effects are greater for financially weaker firms. On the other hand, ROA is positively and significantly related to earnings volatility at all quantiles, while cash flow volatility consistently has a negative effect on operating performance.

Second, the persistence of the effects of a one-period lagged fixed-effects model, which provides a partial test of potential reverse causality issues, was estimated. The lagged specification supports the same direction of effect and the same set of significant relationships as the baseline specification. Financial leverage still has a negative relationship with future operating performance, earnings volatility is still positively related to future ROA, and cash flow volatility still has a negative relationship with firm performance. This suggests that the reported relationships are not just cross-sectional but also carry over to the next reporting period.

Third, country-interacted fixed-effects models were fitted to determine whether the link between the CFO risk-taking measurement and firm performance varies by country (Qatar, Saudi Arabia, and the United Arab Emirates). However, the interaction analysis shows that the estimates of the leverage and volatility effects differ significantly across the three GCC markets, suggesting that the size of the effects differs across the markets. These results are consistent with the descriptive comparisons in Table 5 and indicate that the

effects of CFO risk-taking behaviour on corporate financial performance could be affected by differences in market structure, regulatory environment, and sectoral composition.

Table 8. Further Analysis: Quantile Regression, Lagged Effects and Cross-Country Comparison.

Specification	X1 (Financial Leverage)	X3 (Earnings Volatility)	X4 (Cash Flow Volatility)	Diagnostics/Interpretation
Quantile Regression—Q10 (ROA)	−0.154 *** (0.024)	310.152 *** (64.210)	−125.412 *** (31.045)	Pseudo R ² = 0.245. The negative effect of leverage is the strongest among low-performing firms.
Quantile Regression—Q50 (ROA)	−0.112 *** (0.018)	415.240 *** (51.118)	−98.154 *** (22.147)	Pseudo R ² = 0.312. The results are highly consistent with the baseline fixed-effects model.
Quantile Regression—Q90 (ROA)	−0.062 ** (0.028)	485.620 *** (72.350)	−62.115 ** (28.412)	Pseudo R ² = 0.288. High-performing firms appear to be more resilient to leverage-related risks.
Lagged Fixed-Effects (t − 1)—ROA	−0.098 *** (0.015)	385.142 *** (48.310)	−88.147 *** (20.154)	Within R ² = 0.342. This confirms the persistence of CFO risk-taking effects over time.
Country-Interacted Fixed-Effects	Interacted ***	Interacted ***	Interacted ***	The cross-country coefficient differences are statistically significant across Qatar, Saudi Arabia, and the UAE.

Note: Coefficients with robust standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$. Three quantile regressions were computed at the 10th, 50th, and 90th percentiles of the ROA distribution. Lagged specification: One-period lagged explanatory variables are used to evaluate temporal effects. The country-interacted Fixed-Effects models are used to test if the estimated relationships are significantly different between Qatar, Saudi Arabia and the United Arab Emirates.

The additional analyses continue to support the overall conclusions. The stability of the estimated relationships across quantile regression and lagged specifications and the evidence of important cross-country heterogeneity further support the conclusion that the influence of CFO risk-taking behaviour on firm performance is mediated primarily by financial leverage and earnings volatility, and that the magnitude of these relationships varies by firms' performance levels and national market characteristics.

5. Discussion, Conclusions, and Implications

5.1. The Decisive Role of Financial Leverage

The results consistently show that financial leverage is the CFO risk-taking proxy with the strongest negative association with corporate performance. Financial leverage shows a very negative correlation with ROA, suggesting that an increase in the ratio of debt to equity lowers firms' operating efficiency. This finding corroborates Agency Theory (Jensen & Meckling, 1976), which suggests that the greater the level of debt, the higher the agency costs, financial distress risk, and financing constraints, and the lower the flexibility of managers and operational efficiency.

Financial leverage also has a negative statistically significant coefficient in the ROE model, but the overall power in the ROE model is still not as high as that in the ROA model. This indicates that a wider range of firm-specific and/or market-specific factors than those measured by the CFO behavioural risk-taking proxies used in this study influence shareholders' returns. Therefore, the ROE results were interpreted with prudence and

should be regarded as empirical support for the link between CFO risk-taking behaviour and equity performance but should be regarded as limited.

The increased robustness analyses confirmed these findings. Multicollinearity was assessed and ruled out using diagnostic tests, and heteroscedasticity and serial correlation were corrected using robust standard errors. Furthermore, the results of the quantile regression suggest that financial leverage has the most negative impact on companies in the bottom quartile of the performance distribution, suggesting that the impact of financial leverage is more significant for a company with lower performance than for a company with higher performance.

5.2. The Risk–Return Paradox: Productive Versus Destructive Volatility

One of the most significant theoretical findings of this study is the clear separation between productive and destructive financial volatility. Both ROA and EPS are positively related to earnings volatility, whereas cash flow volatility is negatively related to ROA. The results are in line with Prospect Theory (Kahneman & Tversky, 1979), since executives may intend to take strategic risks if they believe that there are chances of earning rewards; however, they will not take any risks threatening the liquidity and survival of the firm.

In managerial terms, the dispersion of earnings resulting from strategic investment choices seems to be a sign of productive risk-taking and an increase in the company's operating performance. Conversely, cash flow volatility indicates poor cash flow management and operational inefficiency. However, not every type of financial volatility is bad; its effects depend on the source of volatility.

Robustness analyses support this ongoing interpretation. The positive relationship between earnings volatility and firm performance is statistically significant across various levels of performance, as suggested by the quantile regression, while the results from lagged fixed-effects estimations show that the impact of CFO risk-taking behaviour goes beyond the immediate accounting period. These results reinforce the hypothesis that financial decisions impact the performance of the operations that follow, as opposed to just the financial results of the period in which they are made.

5.3. Capital Investment Ambiguity

Capital expenditure intensity is a limited indicator of the positive correlation with ROA, and there is no statistically significant relationship between capital expenditure intensity and ROE or EPS. Capital investment appears to be an effective way of increasing operating efficiency to some degree, but the advantages of such capital investment are not always reflected in equity shareholder returns or Earnings Per Share.

This result is consistent with the Upper Echelons theory (Hambrick & Mason, 1984), which states that the return that can be expected from investments is determined not only by the size of the investment but also by the quality of the management judgment and quality of the allocation of capital. However, in capital-intensive GCC industries, long-duration projects are often undertaken, and the return on investment can only be felt after a long time has elapsed following project implementation, which may be the reason for the relatively low level of statistical relationship found in the current study.

The quantile regression analysis also shows that the percentage of contributing capital expenditure is not very high in all performance levels, which also supports the finding that capital expenditure is not sufficient to create sustainable improvements in the overall financial performance of the companies.

5.4. Conclusions

This study makes three specific contributions to the literature. First, it shifts the analytical focus from the widely studied Chief Executive Officer (CEO) to the increasingly

influential Chief Financial Officer (CFO), providing the first large-scale empirical evidence linking CFO risk-taking behaviour, proxied by financial leverage, capital expenditure intensity, earnings volatility, and cash flow volatility, to accounting-based financial performance in the GCC region. Second, it extends Upper Echelons Theory (Hambrick & Mason, 1984) and Prospect Theory (Kahneman & Tversky, 1979) to a non-Western, emerging market institutional context, demonstrating that the risk–return relationship is neither uniformly positive nor negative but is contingent on the type of risk and the performance metric examined. Third, it provides the first country-comparative and sector-level evidence on CFO risk-taking in the GCC industrial, energy, and petrochemical sectors, revealing that the leverage penalty is most pronounced in industrial firms, while energy-sector firms, many of which are partially state-affiliated, exhibit greater debt capacity and more attenuated leverage effects.

The empirical results reveal that operating performance is, at all times, negatively impacted by financial leverage, whereas the earnings volatility created by strategic managerial choices is positively related to ROA and EPS. However, cash flow fluctuations can negatively impact business efficiency, which is why it is crucial to have consistent liquidity management practices. The results indicate that the effect of CFO risk-taking on various aspects of firm performance varies and is significantly stronger in operating performance than in shareholder-oriented performance measures.

In addition, the robustness analysis results, such as diagnostic testing, Hausman model selection, quantile regression, lagged fixed-effects estimation, and cross-country comparisons, offer further justification that the main results are not contaminated by failing to satisfy the econometric assumptions.

Overall, the results further expand the study of Upper Echelons Theory in the institutional setting of the GCC region and add new empirical evidence for the validity of Prospect Theory in the context of managerial financial decision-making in emerging markets.

5.5. Practical Implications

The results have implications for corporate boards, Chief Financial Officers, investors, and financial regulators in the GCC.

First, boards of directors need to differentiate between financial risk, which can be productive, and financial risk, which can be destructive. Earnings fluctuations are a result of sound decisions to invest in a strategy, which does not mean that the management of the company is poor. However, if the company has a lot of cash flow fluctuations from time to time, it is an early warning sign that it needs immediate managerial attention.

Second, companies should be more conservative in their leverage ratios, especially when the economy is uncertain, because the higher the leverage ratio, the lower the operating performance of the company. Therefore, it is crucial that treasury management focuses on both liquidity stability and investment growth.

Third, the cross-country comparison highlights the differences in financial characteristics between Qatar and the UAE and Saudi Arabia. In general, firms in Qatar and Saudi Arabia have higher leverage ratios, and firms in the UAE have higher capital expenditure ratios than firms in Qatar and Saudi Arabia. Consequently, corporate governance procedures and financial risk management policies should be tailored to the institutional and economic features of each GCC market rather than having a common regional governance framework.

Lastly, policymakers might wish to further enhance financial risk disclosure at the CFO level to increase transparency around leverage policies, investment decisions, and liquidity management to enable better-informed investment and governance decisions.

5.6. Limitations and Future Research

It is important to note that there are several limitations to drawing conclusions from the results of this study. First, the sample represents only 26 publicly listed industrial companies in the three GCC countries and may not be representative of the wider population of GCC companies, especially privately owned companies and small companies. Second, the behavioural proxies used in this study measure the impact of CFOs' decisions on financial outcomes and not the financial outcomes per se and are thus not representative of the CFOs' psychological traits. Behavioural surveys, executive interviews, or psychometric evaluations of managerial risk preferences could be included in future research.

Third, while several robustness tests, such as diagnostic tests, quantile regression, lagged fixed-effects estimation, and model specification tests, were performed, the data were observational and therefore did not allow for definite causal inferences. Dynamic panel estimators, such as System GMM, may be used in future studies to further tackle issues of endogeneity and better support causal inference.

Fourth, ownership structure and government participation were not explicitly considered in the regression models, although they could affect financial decision-making in GCC firms. Future studies should examine whether state ownership, ownership concentration, and institutional governance buffer the link between CFO risk-taking behaviour and corporate performance.

Lastly, a large sample size across more GCC countries and non-industrial sectors and privately owned enterprises would enhance the generalisability of the findings. Further analyses can also investigate the industry differences in CFO's risk-taking behaviour and the influence of institutional environments on CFO's financial decision-making in emerging markets.

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