Original Research

Exploring the Determinants of Firms' Short-Term Investment Across the GCC Countries

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Abstract

This study sheds novel light on the factors influencing short-term investments made by businesses. It delves into the impact of previously unexplored variables on working capital requirements at both the firm and macroeconomic levels. These variables include equity issuance activity, corporate yields, free cash flow, retained earnings, depreciation, government oil revenue, and trade levels. The study employs a pooled Ordinary Least Squares (OLS) regression model on a panel dataset spanning the years 2000 to 2014. This investigation extends the existing body of knowledge regarding the determinants of corporate short-term investments in the context of a novel emerging market, specifically the Gulf Cooperation Council (GCC) market. The findings reveal that fluctuations in government oil revenue and trade conditions exert a significant influence on the short-term investments of service businesses in the GCC, with a stronger impact compared to their long-term investments. Considering these findings, GCC economic policymakers could consider implementing targeted interventions to bolster the resilience of service-sector firms. This could include facilitating access to financing channels less susceptible to national economic fluctuations, as well as enacting policies and programs that encourage service firms to diversify their revenue streams through increased export activity and lessened dependence on the domestic market.

Keywords: Corporate Finance, Firms' short-term Investments, Gulf Cooperation Council (GCC), Working Capital requirements.

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Introduction

The past six decades have witnessed a burgeoning of ideas aimed at solidifying corporate finance as a scientific discipline. Each novel theory has proposed a distinct lens through which to analyze and address financial and investment decision-making challenges. As Harris and Raviv (1991), note, "The irrelevance theory of capital structure developed by Modigliani and Miller (1958), served as the foundational cornerstone for corporate finance literature, inspiring a wave of subsequent research." This seminal work has spawned a plethora of hypotheses built upon the concept of capital structure, encompassing the trade-off theory, pecking order theory, agency cost theory, and market timing theory. These theories have ignited a vibrant research landscape, prompting scholars to delve into diverse aspects of corporate finance, including capital budgeting practices, determinants of the cost of capital, capital structure choices, and dividend policy– all crucial considerations for financial and investment decision-makers. However, existing research warrants further exploration of two crucial, yet often neglected, facets of corporate finance: the determinants of firms' capital expenditures and the determinants of firms' working capital requirements (Rehman et al., 2017). Despite representing the long-term and short-term investment arms of the firm, respectively, and being cornerstones of academic curricula, these elements have received limited research attention, particularly in the context of developing markets. This necessitates a renewed focus on these areas, with a particular emphasis on illuminating the factors influencing firms' capital expenditure and working capital needs in emerging economies (Bin et al., 2019).

Driven by the critical need for information regarding short-term investments in emerging and frontier markets, this study seeks to illuminate the factors influencing companies' investment decisions within this timeframe. Addressing this under-researched area holds significant implications for investors, governments, and financial experts alike, empowering them with the knowledge necessary to navigate the complex landscape of these dynamic markets. As Martens et al. (2021), aptly states, "The recent economic development and investor-friendly policies in many frontier markets have integrated them into the global economy, increasing market depth and liquidity. Yet, these markets remain under-researched and undervalued by institutional investors, leaving them inexpensive." This lack of robust research and information available to investors can hinder their motivation to engage in these markets, despite the potential opportunities they offer. Therefore, this research study aims to bridge this information gap and provide invaluable insights into the determinants of short-term investment decisions in emerging and frontier markets, ultimately contributing to a more informed and efficient investment landscape (Hussain et al., 2012).

The dependence of many major emerging and frontier markets on single revenue sources further underscores the importance of investigating short-term investment behavior. For example, the Gulf Cooperation Council (GCC) markets are often accused of being fueled primarily by income from their hydrocarbon commodities. This perception among investors suggests a potential direct link between such a volatile source of income and market activity, including investment decisions. Consequently, robust data supporting this relationship could bolster investor confidence and willingness to engage

in these markets (Habib & Mourad, 2022). Furthermore, a significant gap exists in the existing literature on the determinants of companies' short-term investments. While extensive research has addressed firm-level factors, virtually no studies have explored the potential influence of macroeconomic forces on these investment decisions. This lack of attention to the broader economic context leaves a critical gap in our understanding of investment behavior in emerging and frontier markets.

Motivated by the diversification efforts of Gulf Cooperation Council (GCC) governments over the past four decades, this study aims to investigate the determinants of firms' short-term investments within the GCC region. Despite significant efforts to diversify national economies away from dependence on hydrocarbon exports, the potential impact on firms' short-term investment behavior remains largely unexplored. This study addresses this gap by examining the influence of key macroeconomic factors, namely government expenditures, government revenues, crude oil prices, and trade terms (Khan et al., 2021).

The study's primary objective is to assess the extent to which these factors, along with firm-specific characteristics, shape short-term investment decisions. This analysis builds upon prior research by considering three distinct categories of factors. First, Firm's external financing measures. This category examines factors such as access to external capital, debt levels, and creditworthiness, which can influence a firm's ability to finance short-term investments. Second, Firm's internal financing measures. This category focuses on factors such as profitability, liquidity, and asset turnover, which reflect the firm's internal capacity to generate resources for short-term investments. Third, Macroeconomic conditions. This category encompasses key economic indicators such as government expenditures, government revenues, crude oil prices, and trade terms, which can significantly impact the overall business environment and investment climate within the GCC region. By investigating the interplay of these factors, this study seeks to identify both common and unique determinants of firms' short-term investments in the GCC compared to developed and emerging economies. Additionally, the study aims to shed light on the specific impact of critical macroeconomic factors on the investment behavior of GCC firms, providing valuable insights for policymakers and business leaders alike (Habib & Dalwai, 2023).

This study contributes significantly to the existing understanding of short-term investment determinants within firms. The paper expands the scope of current knowledge by incorporating novel research on emergent markets, particularly those of the GCC (Gulf Cooperation Council). These markets, representative of resource-dependent economies, provide valuable insights into the influence of macroeconomic factors, specifically government oil revenues and trade terms, on working capital requirements. Additionally, the study enhances existing literature by employing a refined measurement of working capital requirements, differentiating it from related concepts like "working capital management" and "net working capital" used in previous studies. This distinction facilitates a more precise analysis of the sole impact of determinants on working capital needs, thereby solidifying the paper's contribution to the field.

Furthermore, this study unveils novel insights into the influence of previously unexplored firm-level variables, including equity issuance activity, firm return rate, free

cash flow, and retained earnings. Notably, it reveals that government oil income and changes in trade terms exert a more pronounced influence on short-term investment decisions within GCC service firms compared to their industrial counterparts. This finding suggests that the GCC services sector remains relatively nascent, heavily reliant on domestic markets, and necessitates further exposure to international markets for sustained growth.

The remainder of this paper is structured as follows: Section 2 delves into a thorough review of the relevant literature. Section 3 provides detailed descriptions of the utilized data and variables. Section 4 outlines the adopted empirical methodology. Section 5 presents and discusses the obtained empirical findings. Finally, Section 6 concludes the paper.

Literature review

The crucial role of capital management in business operations encompasses both long-term investment decisions and the crucial short-term management of working capital. Working capital directly impacts a company's liquidity and requires careful monitoring to prevent insolvency. This critical element enables businesses to cover immediate expenses and liabilities, ensuring smooth operation and financial stability. Finance managers primarily focus on two aspects of working capital: its requirements and effective management. By ensuring sufficient cash flow for daily activities and mitigating the risk of default on short-term debts, working capital plays a vital role in organizational success (Etiennot et al., 2011)

The significance of working capital management is widely recognized within the business community. For instance, Protiviti Consulting's 2014 Financial Priorities Survey highlighted its importance as a key focus area for Chief Financial Officers (Ramiah et al., 2016). Moreover, prominent international accounting firms, such as Price waterhouse Coopers, offer specialized services and publish regular reports on working capital, further emphasizing its critical role. Despite this widespread interest, the factors influencing effective working capital management remain under-researched, presenting a significant opportunity for further scholarly exploration.

The critical role of working capital management in driving profitability, risk, and firm value has been established by Smith (1980). Several studies have explored the positive impact of reducing working capital components on corporate profits (Afrifa & Padachi, 2016; Bin et al., 2019; Deloof, 2003; Jose et al., 1996; Padachi, 2006; Shin & Soenen, 1998). These recent contributions can be categorized into two main streams. First, the determinants of working capital management. This stream investigates the factors influencing management decisions regarding working capital levels (Habib & Mourad, 2022; Nyeadi et al., 2018). Second, the determinants of working capital requirements. This stream focuses on identifying the factors impacting the amount of working capital needed for a firm's operations (Abbadi & Abbadi, 2012; Akinlo, 2012; Fernandez-Corugedo et al., 2012; Gill, 2011; Kayani et al., 2021; Koralun-Bereźnicka, 2014; Nazir & Afza, 2009).

However, inconsistencies in calculating working capital requirements remain a prevalent issue. For instance, Gill (2011) and Nazir and Afza (2009) utilized the net operating working capital formula, while Fernandez-Corugedo et al. (2012) employed the net working capital formula. Akinlo (2012), adopted a hybrid approach using both the net working capital and the cash conversion cycle ratio. Koralun-Bereźnicka (2014) further employed four financial ratios to analyze the relationships between various components of working capital and net turnover. These discrepancies in measuring working capital requirements echo the observations of Kayani et al. (2021), who highlighted how diverse definitions can distort the perception of a firm's liquidity.

Existing research on firm-level working capital requirements has focused primarily on a limited set of factors, including the cash conversion cycle, financial leverage, profitability, and size. However, theories such as the trade-off theory, pecking order theory, and agency cost theory suggest additional determinants of business investments, such as net equity activities, firm rate of return, free cash flow, retained earnings, and depreciation. These factors have largely been overlooked in the context of working capital requirements (Ramiah et al., 2016).

Furthermore, only a handful of studies have incorporated macroeconomic parameters like GDP and interest rates into their analysis (Abbadi & Abbadi, 2012; Akinlo, 2012; Fernandez-Corugedo et al., 2012; Nazir & Afza, 2009). Notably, these studies primarily focused on economies with single sources of income, neglecting the potential impact of diversified revenue streams in other economies. This research gap necessitates a more comprehensive understanding of working capital requirements and their determinants. Specifically, existing findings need to be expanded to consider both firm-level and country-level factors. To address this gap, this study aims to empirically investigate the key determinants of working capital requirements within the context of emerging markets, particularly the GCC region.

To comprehensively analyze the determinants of working capital requirements, this study categorizes factors into three distinct groups. First, external financing factors. This category examines aspects impacting a firm's ability to acquire external financing, such as net equity activities, firm rate of return, free cash flow, retained earnings, and depreciation (Bin et al., 2019). Second, internal financing factors. This category focuses on internal resources available to the firm, including profitability and financial leverage. Third, macroeconomic factors. This category explores the influence of broader economic trends on working capital needs, specifically focusing on government oil revenues and terms of trade within the context of GCC markets (Elbadry, 2018).

The oil-dependent nature of the GCC markets presents a valuable model for generalizing the study's findings to other similarly structured economies. By exploring the similarities and differences in working capital requirements determinants between previously studied markets and the GCC, this research offers valuable insights into the specific requirements of oil-dependent economies. Additionally, it contributes to the development of a robust methodology for monitoring working capital requirements, leading to more reliable data and a deeper understanding of its influencing factors.

Definition of Working Capital Requirement

Working capital encompasses all current assets and liabilities listed on a company's balance sheet, representing its short-term investments and obligations. The difference between current assets and current liabilities yields net working capital, indicating the liquidity available to meet short-term commitments. However, this method overlooks the operational liquidity required for daily business activities (Etiennot et al., 2011; Padachi, 2006). Current assets and short-term operational obligations are the lifeblood of daily business activity. Examples of current assets include inventory, accounts receivable, and cash received, while accounts payable and accruals represent short-term operating obligations. Subtracting these components provides the working capital needed, which answers the question of how much funding the business requires for daily operations (Etiennot et al., 2011). A positive working capital need indicates that short-term loans are not supporting the firm's current assets, and its working capital finances daily activities. Conversely, a negative working capital signifies reliance on short-term borrowing to fund daily operations (Seth et al., 2020).

Inconsistencies exist in defining "working capital requirements" and "management." Except for Nazir and Afza (2009) and Gill (2011), who define it as the difference between current assets and current operating liabilities, studies vary in their approach. Fernandez-Corugedo et al. (2012) and Abbadi and Abbadi (2012) exclude short-term loans from their calculation, while Akinlo (2012), blends the concepts of working capital management and requirements. Koralun-Bereźnicka (2014), further utilizes financial ratios that blur the distinction between the two concepts. This study defines working capital as the difference between current assets and current operating obligations. This approach provides more robust evidence for identifying the determinants of working capital requirements as it reflects the actual financial needs for daily operations, excluding interest-bearing liabilities which are already a strong determinant themselves.

Descriptions of the data and variables

This study draws upon data from all listed companies on the GCC stock exchanges, encompassing the Muscat Stock Exchange (MSE), Saudi Stock Exchange (Tadawul), Bahrain Bourse, Qatar Stock Exchange, Kuwait Stock Exchange, Abu Dhabi Securities Exchange, and Dubai Financial Market (DFM). As of December 31st, 2014, a total of 693 companies were listed on these exchanges. However, due to the inherent differences in working capital requirements between financial and non-financial firms, this study focuses solely on the latter. This distinction arises from the contrasting nature of their short-term investments. Non-financial firms utilize physical assets like inventory to sustain operations, while financial institutions operate within a different framework. Bank balance sheets, for instance, differ significantly from those of non-financial firms due to their unique current assets and liabilities. Banks' current liabilities are especially difficult to calculate, as their capital primarily relies on demand deposits, subject to withdrawal at any time. Additionally, their investments typically involve money market instruments rather than tangible assets like inventory (Yilmaz & Acar, 2022).

Therefore, after excluding 258 banks, insurance companies, and financial investment firms, this study analyzes a total of 435 non-financial companies listed on the GCC

exchanges. The data set comprises unbalanced panel data spanning from 2000 to 2014, resulting in 1,834 observations. Data were primarily obtained through the Bloomberg Terminal, with any missing information sourced from the respective firms' financial statements. Macroeconomic data for the individual countries was retrieved from the World Bank database. Furthermore, the study period of 2000 to 2014 was deliberately chosen due to the relative macroeconomic stability of the investigated markets. Compared to the post-2014 period, characterized by significant oil price fluctuations and their subsequent impact on market growth, this timeframe offered a more controlled environment for analyzing the determinants of working capital requirements.

Empirical Methodology

Following Al-Wahaibi and Hussainy (2022), the current study categorizes the variables under investigation into three groups: firms' external financing factors, internal financing factors, and macroeconomic factors. The first two categories will achieve the goal of comparing the findings of these study inquiries to those of previous studies on the drivers of enterprises' short-term investments. The third category will address whether macroeconomic variables affect enterprises' short-term investments.

The authors estimate the following panel Ordinary Least Squares regression (OLS) with robust standard errors to cope with the heteroscedasticity: Where it is the error term, β is the coefficients of the independent variables, Δ indicates change, and the subscript t indicates the firm at a specific year.

$$\begin{aligned} WCR_{it} = {} & \beta_0 + \beta_1 NEIA_{it} + \beta_2 FROR_{it} + \beta_3 FLEVER_{it} + \beta_4 TOBINQ_{it} + \beta_5 CCC_{it} + \beta_6 FCF_{it} \\ & + \beta_7 NCAPEX_{it} + \beta_8 RE_{it} + \beta_9 DEPRE_{it} + \beta_{10} ROA_{it} + \beta_{11} \Delta SALES_{it} \\ & + \beta_{12} \Delta TA_{it} + \beta_{13} \Delta GOVR_{it} + \beta_{14} TOT_{it} + \varepsilon_{it} \end{aligned}$$

Table 1. shows a summary of the variables within the above model and their predicted relationships with working capital requirements.

Table 1. Variables and relashionships

Symbol	Name	Definition	Predicted Relationship
WCR	Working Capital Requirement	WCR_t / TA_t	NA
NEIA	Net Equity Issuing Authority	NE_t / TA_t	+
FROR	Weighted Average Cost of Capital	$WACC_t$	+
FLEVER	Financial Leverage	$FLEVER_t$	+
TOBINQ	Ratio of the Market Value of the Firm	$TOBINQ_t$	+
CCC	Cash Conversion Cycle	CCC_t	-
FCF	Free Cash Flow	FCF_t / TA_t	+
NCAPEX	Net Capital Expenditures	$NCAPEX_t / TA_t$	-
RE	Retained Earnings	RE_t / TA_t	+

Symbol	Name	Definition	Predicted Relationship
DEPRE	Depreciation	$DEPRE_t/TA_t$	-/+
ROA	Returned on Assets	ROA_t/TA_t	+
Δ SALES	Percentage Change in Sales	$\Delta SAL_t/TA_t$	+
ΔTA	Percentage Change in Total Assets	$\Delta TA_t/TA_t$	-
ΔGOVR	Percentage Change in Government Oil Revenue	$\Delta GOVR_t$	+
TOT	The Ratio of Terms of Trade	TOT_t	+

The variable employed in this study to represent the company's short-term investment is the working capital requirement, which is determined as follows:

$$WCR_t = (\text{Current assets}_t - \text{Current operating liabilities}_t)/TA_t$$

WCR is the dependent variable, and it represents the current assets, including inventory, accounts receivable, prepaid costs, cash, and cash equivalents. Current operational obligations include accounts payable, unpaid taxes, and accruals. All accounting variables in this study are scaled on TA_t, which reflects total assets recorded on the balance sheet at year t. Moreover, the independent variables include the three categories of factors under investigation, and Table 2. provides the rationale for considering these variables and how they are measured. The hypothetical links between the firm's external financing factors and the firm's working capital requirement are primarily based on the trade-off theory. The theory advocates for an efficient capital structure and a preference for debt financing over equity financing so that the corporation can benefit from tax breaks and ultimately increase its value. Given that both NEIA and FLEVER are sources of liquidity but differ in terms of their associated cost, defined as FROR, this must impact on the firm's capacity to fund both long-term and short-term investments. Moreover, except for NCAPEX, the hypothetical justification for the links between the firms' internal finance elements and working capital requirements is based mainly on the pecking order theory and agency cost theory. These theories suggest that internal finance variables influence business investments. Therefore, previous studies described in the literature review account for them but need to include significant factors such as the FCF, RE, and DEPRE, which are considered in this study.

Furthermore, the hypothetical justification for the link between NCAPEX and working capital requirements is based on Fazzari and Petersen (1993) theory that companies minimize the amount of working capital required to support financing fixed investments under capital rationing. Furthermore, the current study's primary goal is to examine the company's working capital requirement and the previously mentioned company-level factors and relevant macroeconomic variables. The current study considers government oil revenue and the country's levels of trade as the most influential macroeconomic variables in the GCC country's markets.

Table 2. Information about the variables examined by the study and the rationale for their consideration.

Category	Variable Name	Definition	Variable Calculation Formula	The Rationale for Considering the Variable
Companies External Financing Factors	Net Equity Issuing Activity	NEIA	$NEIA_t = (\text{Outstanding shares}_t - \text{Outstanding shares}_{t-1})/TA_t$	A hypothetical scenario implies that if the company at year $_t$ had a positive NEIA, it would have raised more money in that particular year and vice versa. Thus, the company capacity for investment will increase.
Companies External Financing Factors	Financial Leverage Ratio	FLEVER	$FLEVER_t = \frac{\text{Total debt}}{\text{Total equity}} \times 100$	A rising FL ratio means that the company has raised more capital through the issuance of debt than it has through the issuance of equity. Additionally, borrowing money has lower cost than issuing share to raise money. Thus, the company capacity for investment will increase.
Companies' External Financing Factors	The Firm Rate of Return	WACC	$WACC_t = \{Wd_t Rd_t(1-T)\} + (Wp_t Rp_t) + (We_t Re_t)$ **Where:** • Wd_t: The proportion of debt that the firm holds at time t. • Rd_t : The marginal cost of debt before tax at time t. • T : The firm's marginal tax rate at time t. • Wp_t: The proportion of preferred equity the firm holds at time t. • Rp_t : The marginal cost of preferred equity at time t. • We_t: The proportion of common equity that the firm holds at time t. • Re_t : The marginal cost of common equity at time t.	The WACC is the lowest interest rate required for a firm's project to have a positive net present value. As a result, a steady improvement in the rate of return must be accompanied by an increase in cash via debt or equity issuance. As a result, the company's investment capacity will improve.
Companies External Financing Factors	The Firm's Market Value	Tobin's q	$Tobin's\ q_t = \frac{(\text{Equity market value} + \text{Liabilites market value})}{(\text{Equity book value} + \text{Liabilites book value})} \times 100$	A corporation with a high market value may, in principle, raise funds from lenders and investors. As a result, businesses with several net present value initiatives will raise market capital to support these activities. As a result, the company's cash position will improve.
Companies Internal Financing Factors	The Cash Conversion Cycle	CCC	$CCC_t = (DIO_t + ACP_t - DPO_t)$ **Where:** • DIO_t: the days inventory outstanding at time t • ACP_t: the average collection period at time t • DPO_t: the days payable outstanding at time t	In theory, an increase in CCC will entail a delay in cash inflow, negatively affecting the firm's cash position.
Companies Internal Financing Factors	Free Cash Flow	FCF	$FC_t = (\text{Operating cash flow}_t - \text{Capital expenditures}_t)/TA_t$	In theory, a rise in FCF results in a financial surplus. As a result, the firm's ability to invest grows.

Table 2. Information about the variables examined by the study and the rationale for their consideration (Continoued)

Category	Variable Name	Definition	Variable Calculation Formula	The Rationale for Considering the Variable
Companies Internal Financing Factors	Net capital expenditures	NCAPEX	$NCAPEX_t = (CAPEX_t - DEPRE_t)/TA_t$	In theory, a rise in NCAPEX shows that the business increased its assets for long-term investment. The expansion of assets will be accompanied by a rise in daily company expenditure. In this situation, it will have a negative impact on the firm's cash position.
Companies Internal Financing Factors	Retained earnings	RE	$RE_t = (Retained\ earnings_{t-1} + Net\ income_t - Dividends_t)/TA_t$	In theory, a rise in RE will improve the firm's financial situation. As a result, its cash situation will improve.
Companies Internal Financing Factors	Depreciation	DEP	$DEP_t = \frac{Original\ cost\ of\ asset - Scrap\ value}{Estimated\ life\ of\ asset}/TA_t$	The buildup of depreciation signifies a decline in the life of assets, which subsequently raises maintenance or maybe replacement expenditures, which eventually negatively affects the firm's financial position. DEPRE, on the other hand, reflects the firm's potential to save money by deducting it from net profit for tax purposes; hence, depreciation may have a positive effect. As a result, the predicted impact of this variable on the firm's cash situation is earthier negative or positive.
Companies Internal Financing Factors	Return on Asset	ROA	$ROA_t = \frac{Net\ income_t}{Total\ assets_t} \times 100$	In theory, a rise in the ROA ratio shows that the corporation made more money from its assets. As a result, a rise in earnings will boost the firm's cash position.
Control Variable	Change in Sales	ΔSAL	$\Delta SAL_t = (Sales_t - Sales_{t-1})/TA_t$	Changes in revenue and total assets both act as control variables to account for the firm's size expansion. However, sales growth is expected to have a beneficial impact on the firm's short-term investment due to the rise in income. Asset growth, on the other hand, is expected to have a negative impact on the firm's short-term investment due to the rise in expenditure and expenses connected with it.
Control Variable	Change in Total Assets	ΔTA	$\Delta TA_t = (TA_t - TA_{t-1})/TA_t$	
Macroeconomic factors	Change in Government Oil Revenues	ΔGOVR	$\Delta GOVR_t = (GOVR_t - GOVR_{t-1})/GOVR_{t-1}$	In theory, increased government revenue should increase economic liquidity. As a result, interest rates will fall, and businesses will be able to borrow more easily to meet their working capital needs. However, figures on government budgetary oil income for several GCC nations are unavailable. As a result, the author makes use of World Bank statistics on oil rents. The oil rent is the difference between the market price of crude oil and the overall production expenses.
Macroeconomic factors	Ratio of terms of trade	TOT	$TOT_t = \frac{Index\ of\ export\ price}{Index\ of\ import\ price}$	TOT allows you to investigate the impact of trade on a company's short-term investments. In theory, an increase in exported goods and services will lead to increased company output and, eventually, increased sales volumes. In that instance, the firm's cash position is improving.

Empirical Results and Discussion

Descriptive statistics and correlation analysis

Table 2 in Appendix (II) presents the descriptive statistics and correlation coefficient matrix for the data. Panel (A) reveals moderate variations across all investigated factors. The average working capital requirement stands at approximately 14% of total assets for the sample businesses, which aligns with the expected range for similar-sized enterprises. Furthermore, the presence of both positive and negative working capital needs indicates a mix of cautious and aggressive working capital management strategies within the sample. A cautious strategy prioritizes holding cash and exceeding current liabilities to mitigate potential risks associated with operational fluctuations. Conversely, an aggressive strategy minimizes asset investments relative to liabilities, requiring rapid inventory turnover and potentially leading to negative working capital and reliance on short-term borrowing.

Panel (A) of Table 2 reveals no outliers within the first group of investigated variables. The firm rate of return exhibits a moderate range of 4.6% to 9.2%, indicating generally cautious investment policies among the sample businesses. Similarly, the Tobin's Q ratio of approximately 0.5 suggests their market values are reasonably priced. Notably, some firms exhibit high net equity issuance and financial leverage, reaching maximum ranges of 160% and 130% of total assets respectively. Further investigation revealed that these instances represent new businesses requiring substantial initial funding, typically supported by a large influx of equity or debt. This is reflected in the average figures, with the sample demonstrating moderate levels of equity issuance (50%) and financial leverage (58%). The second and third variable categories also show no significant outliers, except for retained earnings. The minimum range includes negative values, indicating the presence of firms experiencing compounded losses in specific years.

Further analysis was conducted to explore the dependencies between the investigated variables, focusing on pairwise correlations in Panel (B) of Table 3. The results reveal logical associations, characterized by both positive and negative correlations. For instance, working capital requirements exhibit an inverse relationship with the cash conversion cycle. An elongated cash conversion cycle translates to reduced cash inflow, leading to a negative demand for working capital. Similarly, an inverse relationship exists between working capital requirements and net capital expenditures. Increased investment activity leads to higher levels of day-to-day operations, thereby requiring lower working capital. This analysis, beyond identifying relationships among the variables, also serves as a preliminary assessment for potential collinearity issues. Notably, the results demonstrate relatively low correlations across all variables, mitigating concerns regarding collinearity.

Table 3. Descriptive Statistics & Correlation Matrix

Particulars	Investment	Companies External Financing Factors				Companies Internal Financing Factors								Macroeconomic Factors	
		WCR	NEIA	FROR	FLEVER	TOBINO	CCC	FCF	NCAPEX	RE	DEPRE	ROA	SALES	TA	GOVE	TOT
Panel A: Descriptive Statistics																
Observation	4350	3991	4976	3922	4402	3571	4208	3758	5038	4528	4746	4658	4499	6525	6525
Mean	0.1418	0.4969	6.6512	0.5823	1.3808	0.3461	0.0846	0.0402	0.1884	0.0284	6.0412	0.0543	0.0616	37.6429	0.1136
Std. Dev	0.1312	0.6392	1.7232	0.4750	0.4098	2.6287	0.0567	0.0320	0.1530	0.0177	4.9565	0.0688	0.0865	8.4678	0.3214
Min	-0.0172	0.0290	4.6375	0.0962	0.9174	8.5366	0.0221	0.0062	-0.0071	0.0062	-0.0138	-0.0223	-0.0462	25.9668	0.0030
Max	0.3255	1.6337	9.2366	1.3273	1.9884	77.5155	0.1696	0.0883	0.4001	0.0523	13.0276	0.1599	0.1838	48.8302	8.8527
Panel B: Correlation Matrix																
WCR	1.0000														
NEIA	0.0588	1.0000													
FROR	0.0786	-0.1150	1.0000												
FLEVER	0.2762	0.0134	0.0918	1.0000											
TOBINQ	0.1428	-0.1528	0.0923	0.1344	1.0000										
CCC	-0.2131	-0.0111	-0.0116	-0.0295	0.0376	1.0000									
FCF	0.1245	0.1026	-0.0572	-0.0027	0.0820	-0.0109	1.0000								
NCAPEX	-0.1088	-0.0445	0.0062	0.0486	0.1586	0.1231	0.1645	1.0000							
RE	0.2311	-0.2064	0.0670	0.3816	0.1511	0.0220	0.0274	0.0714	1.0000						
DEPRE	-0.0879	0.1288	-0.0398	-0.0858	0.1386	0.1497	0.1216	0.1497	-0.0620	1.0000					
ROA	0.3164	-0.1540	0.0569	0.3222	0.3971	0.0777	0.1613	0.1560	0.5417	-0.0171	1.0000				
SALES	0.1430	-0.0153	-0.0132	0.0680	0.1780	0.0497	0.1568	0.1509	0.0440	0.0343	0.2772	1.0000			
TA	0.0872	-0.1119	0.0465	0.0571	0.1530	0.0408	0.0522	0.2619	0.1011	-0.1613	0.3792	0.3859	1.0000		
GOVR	0.0369	0.0150	0.0318	0.4305	-0.3034	-0.0786	-0.1991	-0.0278	0.0336	-0.1155	-0.0984	-0.1193	-0.0173	1.0000	
TOT	0.0548	0.0794	-0.0153	0.0379	-0.0204	0.0314	-0.0301	0.0125	0.0327	0.0415	0.0416	0.0137	0.0099	-0.0093	1.0000

Note: This Table combines two statistical Analyses. Panel (A) presents the descriptive statistics namely, the number of observations, mean, standard deviation, and minimum and maximum value of the variables. Panel (B) presents the result of the pairwise correlation in a matrix format. The variables are categorized into three groups as discussed in section 4.

Results of the pooled OLS regression

Table 4. presents the results of three pooled Ordinary Least Squares (OLS) regressions. The first column analyzes the determinants of working capital requirements for the entire sample, providing a comprehensive overview. The second and third columns then delve deeper by examining the service and industrial sectors separately, respectively. This tripartite approach serves three key purposes. First, provide a comprehensive analysis as the first regression provides the overall picture for the entire sample, allowing us to identify the general trends and relationships between variables. Second, provides a robustness check by segmenting the sample and conducting separate regressions for each sector, we can assess the robustness of our findings. This ensures that the observed relationships hold even when controlling for potential sector-specific factors. Third, provides sectorial differences as disaggregated regressions shed light on potential differences in the drivers of working capital requirements between service and industrial companies. This provides valuable insights into the unique challenges and strategies employed by each sector in managing their short-term investments.

The empirical findings for the entire sample (column 1 of Table 4) reveal that nearly all investigated variables influence the working capital requirements of GCC enterprises, albeit with varying degrees of impact. The first group of factors, encompassing net equity issuance activity, firm rate of return, financial leverage ratio, and Tobin's Q ratio, all exhibit positive associations with working capital requirements. However, the statistical significance of these relationships differs. Net equity issuance activity and the financial leverage ratio demonstrate significant positive effects at the 1% level, while the firm rate of return and Tobin's Q ratio reach significance at the 5% level. These findings align with the theoretical rationale presented in this paper for the expected relationships between working capital requirements and external financing parameters.

Furthermore, the relationship between financial leverage and working capital requirements deviates from some prior research. While Nazir and Afza (2009), Akinlo (2012), and Abbadi and Abbadi (2012), identified a negative association, this study aligns with Gill's (2011) findings of a positive correlation. This discrepancy may be attributed to differences in lending policies across countries. As Gill suggests, Canadian lenders prioritize adequate cash levels before loan approval, ensuring borrowers can fulfill their obligations. Companies with a conservative working capital policy already hold strong cash positions, and additional borrowing further strengthens their liquidity. This logic explains the positive relationship observed: increased debt either reflects a pre-existing high cash level that facilitated borrowing or generates cash inflow from investments made with borrowed funds.

The observed relationship between firm value (Tobin's Q) and working capital demand adds further nuance to the existing literature. While Gill (2011), identified a negative association but lacked a clear explanation, this study aligns with Nazir and Afza (2009), in finding a positive correlation. They posit that investors favor companies with positive working capital requirements, as it signals their ability to meet obligations by maintaining a healthy liquidity buffer. Consequently, to meet investor expectations, management may prioritize positive working capital alongside increasing firm value.

Table3: Results of the Pooled OLS Regression

	Variable	Full Sample (1)	Service Sector (2)	Industrial Sector (3)
	Constant	0.0787	0.0426	0.1185
		(0.000)	(0.030)	(0.000)
First Category	NEIA	0.0077	0.0067	0.0187
		(0.000)***	(0.005)**	(0.035)**
	FROR	0.0007	0.0006	0.0032
		(0.014)**	(0.000)**	(0.013)**
	FLEVER	0.010	0.0084	0.0327
		(0.000)***	(0.061)**	(0.000)***
	TOBINQ	0.0211	0.0524	0.0112
		(0.007)**	(0.000)***	(0.025)**
Second Category	CCC	-0.0265	-0.0232	-0.0274
		(0.000)***	(0.000)***	(0.000)***
	FCF	0.0920	0.1548	0.1448
		(0.000)***	(0.0.11)**	(0.104)
	NCAPEX	-0.2452	-0.2927	-0.2795
		(0.000)***	(0.000)***	(0.000)***
	RE	0.0556	0.0045	0.0736
		(0.016)**	(0.898)	(0.096)*
	DEPRE	-0.3452	-0.4458	-0.1992
		(0.0370)	(0.061)*	(0.412)
	ROA	0.0031	0.0028	0.0058
		(0.000)***	(0.0000)**	(0.000)***
	SALES	0.1619	0.2123	0.2578
		(0.000)***	(0.007)**	(0.001)**
	TA	-0.0078	-0.0328	-0.0262
		(0.692)	(0.237)	(0.470)
Third Category	GOVE	0.0009	0.0022	0.0008
		(0.028)**	(0.000)***	(0.069)*
	TOT	0.0163	0.0305	0.0022
		(0.068)*	(0.003)**	(0.963)
	N	1834	738	1096
	F-test	39.51	24.34	27.6
	R^2	0.2392	0.234	0.3721

Notes: The first column presents regression of the full sample companies, and the other two columns present regression of the service and industrial companies respectively. All regressions were run with robust standard errors, and the P-values are in parentheses below the coefficient estimates *, **, and *** indicate significance levels of 1, 5, and 10% respectively.

While Nazir and Afza (2009), attributed the positive association between firm value and working capital requirements to investor preference for companies with liquidity buffers, this study offers an alternative interpretation. Investors, primarily concerned with the firm's market value for trading purposes, tend to buy undervalued stocks and sell overvalued ones. Therefore, the positive correlation might be driven by the notion that increased market valuation enhances the firm's financial credentials, signifying growth and profitability. This improved perception increases the company's ability to raise capital through debt or equity issuance. Consequently, the resulting cash inflows contribute to a gradual rise in working capital demand.

Moving to the second category of factors, all except depreciation and company size (as measured by change in total assets) exhibit strong and significant relationships with working capital demand. At the 1% level of statistical significance, the cash conversion cycle, free cash flow, net capital expenditures, return on assets, and sales growth all demonstrate impactful associations. Retained earnings also show significance, albeit at the 5% level. These findings align with the theoretical framework proposed in this paper regarding the expected correlations between internal financing parameters and working capital requirements. However, some findings diverge from previous research. The association between working capital needs and the cash conversion cycle, for example, contradicts Gill's (2011), observation of a positive relationship. In this study, a longer cash conversion cycle (indicating slower cash inflows) negatively affects working capital requirements, strengthening the theoretical justification for this relationship.

Further strengthening the findings, the relationships between specific internal factors and working capital requirements align with established literature. The observed negative association between net capital expenditures and working capital demand corroborates Fazzari and Petersen (1993), finding that working capital investment is sensitive to cash flow fluctuations and decreases with higher fixed investments. Similarly, the positive correlation between return on assets and working capital requirement aligns with Abbadi and Abbadi (2012), observation that higher profitability leads to increased working capital needs. Finally, the positive association between sales growth and working capital demand is consistent with Gill's (2011) findings, suggesting that growing sales necessitate larger working capital investments.

The third category of variables, encompassing government oil revenue and the terms of trade ratio, exhibits statistically significant positive relationships with working capital requirements. However, the impact of government oil revenue on GCC firms' short-term investments is considerably stronger, with a 5% significance level, compared to the terms of trade ratio at 10%. This suggests that government oil revenue plays a more substantial role in shaping these investment decisions.

Overall, the full sample regression analysis reveals that external and internal finance factors, alongside macroeconomic considerations, serve as significant predictors of short-term investments for GCC enterprises. This finding emphasizes the multifaceted nature of determinants influencing working capital needs. Additionally, the present study offers further insights into potential variations in these drivers across service and industrial sectors (refer to Table 3, columns 2 and 3). Moreover, the regression analysis

demonstrates structural validity or robustness, providing confidence in the reliability of the results.

Looking at the service sector (column 2 of Table 2), the results largely mirror the full sample regression (column 1) in terms of significance levels. However, some key differences emerge. Notably, the influence of financial leverage on working capital requirements diminishes considerably, reaching only a 10% significance level compared to 1% for the overall sample. Similarly, the impact of retained earnings becomes less pronounced, falling below the 5% significance threshold. This suggests that service-sector businesses may prioritize non-operational expenses like advertising and marketing when allocating funds raised through debt or retained earnings. Another interesting divergence lies in the elevated sensitivity of service-sector firms to macroeconomic factors. Government revenue, for instance, exhibits a significantly stronger impact on their working capital needs, reaching a 1% significance level compared to 5% for the full sample. Additionally, the terms of trade relationship attains a 5% significance level, suggesting a more pronounced influence than in the overall analysis.

The factors influencing industrial firms' working capital requirements (column 3) diverge significantly from those of the entire sample. Notable discrepancies includes free cash flow as unlike its significance for the overall sample, free cash flow does not exhibit a statistically significant relationship with working capital requirements in the industrial sector. Also, the impact of retained earnings on working capital requirements is diminished compared to the full sample regression, suggesting a less prominent role in investment decisions. Besides, the influence of macroeconomic factors is almost negligible for industrial firms, with only government revenue demonstrating a statistically significant relationship at the 10% level (compared to 5% for the entire sample).

These findings for service and industrial sectors (columns 2 and 3) suggest a reprioritization of financing sources for GCC-listed companies. External financing variables, primarily net equity issuance and financial leverage, emerge as the most impactful factors on short-term investments. This contradicts the traditional pecking order and market timing theories, which prioritize internal financing over external sources.

The findings further suggest that service-sector firms within GCC nations exhibit a greater sensitivity to government revenue and terms of trade compared to their industrial counterparts. This disparity can be attributed to two key factors. First, is financing dependence as the service-sector firms often rely heavily on bank financing, which exposes them more directly to fluctuations in short-term loan interest rates. These rates, in turn, are influenced by the instability of government oil revenue, leading to volatility in working capital financing availability. Second, market exposure as unlike industrial firms, service organizations tend to have limited exposure to overseas markets. This dependence on the domestic market, which can be subject to periods of lower profitability, can negatively impact the firm's cash position and, consequently, decrease its working capital requirements.

Conclusion

This paper expands the existing literature on the determinants of firms' short-term investments in three keyways. First, it ventures into new territory by examining the case of GCC markets and comparing the findings to established research. Second, it clarifies the measurement of working capital requirements, often confused with related terms like net working capital or management. By focusing on a precise definition, this study introduces new variables and insights. Finally, the study's findings hold relevance for both general financial theory and the specific context of GCC nations.

For instance, financial leverage is found to be high and positively associated with a GCC firm's working capital needs. This contrasts with prior research in other regions, such as Pakistan, Nigeria, and Palestine, where it was found to be significant but negatively correlated. Similarly, this study reveals a substantial negative relationship between the cash conversion cycle and working capital demand in GCC firms, while Canadian companies exhibit a positive association between the two.

This study identifies novel predictors of GCC firms' working capital requirements at both the micro (firm-level) and macro (economic) levels. These include net equity issuance activity, firm rate of return, free cash flow, net capital expenditures, retained earnings, government revenue, and terms of trade. While all factors influence working capital needs, their magnitude of impact varies across industries. Specifically, the study reveals that internal and external financing factors exert a more significant influence on working capital requirements than macroeconomic variables. Additionally, government oil revenue and trade conditions have a greater impact on service-sector firms compared to industrial ones.

These findings offer valuable insights for GCC economic authorities. First, the relative independence of the industrial sector from government revenue fluctuations suggests the success of GCC diversification efforts. Second, to further strengthen the service sector, policymakers should consider providing service-sector firms with access to financing options less susceptible to national economic fluctuations. Third, implement policies and programs that encourage service firms to expand their export capabilities, reducing reliance on the domestic market. Embracing these strategies can help GCC economies move beyond oil dependence and transition towards a more open and diversified economic landscape.

Finally, this study is limited by data challenges that constrain its analytical scope. While the data provides valuable insights, distortions hinder the use of dynamic models to explore the lagged effects of examined factors on firm investment decisions. Additionally, the presence of outliers within the data necessitated data-cleaning procedures. The author addressed this by cross-referencing data points with firm financial statements and subsequently applying a 98% Winsorization technique to stabilize extreme values. Furthermore, the lack of certain macroeconomic data restricts the investigation of potentially significant variables influencing firm investments. This limitation highlights the need for future research to delve deeper into relevant macroeconomic factors, such as educational attainment and institutional effectiveness. Examining the impact of these underexplored elements presents promising avenues for further inquiry.

Author Contributions

Mahmood Ali Al Wahaibi contributed to this research by conducting a comprehensive literature review on relevant scholarly works and identifying key research gaps. Also, He assisted with data collection efforts, including identifying data sources, acquiring necessary permissions, and ensuring data quality. Furthermore, he contributed to the analysis of data and interpretation of findings, providing valuable insights and perspectives.

Syed Sadullah Hussainy contributed to this research by conducting a statistical Analysis through statistical techniques to analyze the data and perform quantitative tests. Also, he designed and prepared figures, tables, and other visual representations of data for clear communication.

Afshan Younas Durrani contributed to this research by conducting a thorough proofreading of the manuscript to ensure accuracy, consistency, and proper formatting. Also, she provided research assistance with tasks such as literature searches, data organization, and reference management.

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