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The threat of political extraction and corporate cash holdings: The case of the GCC countries

Ghada Tayem^{1*}

Abstract: This study examines the motives of corporations in the Gulf Cooperation Council (GCC) countries to hold cash with a focus on institutional characteristics related to the threat of political extraction. Using firm-level financial data and macro-level and institutional data and applying the GMM estimation method, the study finds that corruption (a proxy of the threat of political extraction) is positively related to cash holdings which suggests that the risk of political extraction induces GCC firms to accumulate cash to make political payoffs and preserve their financial flexibility. In terms of firm-level characteristics, GCC firms follow a pecking order as they deplete more cash the larger their capital expenditures. In addition, GCC firms save cash for transaction and precautionary purposes as indicated by the negative relation between cash and cash substitutes. This is the first study to examine the threat of political extraction on cash holdings using the context of the GCC, a cash-rich region with unique institutional settings. The findings on the GCC countries contribute to the ongoing debate regarding the political extraction-cash holdings relationship by examining a context under which corruption is likely to exert a positive impact on the level of cash holdings.

Subjects: Finance; Corporate Finance; Corporate Governance

Keywords: cash holdings; political extraction; corruption; GCC

Subject classification codes: G30; G32

1. Introduction

Corporate liquidity has been the topic of considerable research because of its impact on firm value and policies (Bates et al., 2018; Megginson et al., 2014) and because of the ease of expropriating liquid assets by managers, entrenched large shareholders and politicians (Caprio et al., 2013; Harford et al., 2008; Tran, 2020). Previous research on corporate liquidity has important theoretical and empirical results concerning the impact of firm-specific (Diaw, 2021; Goodell et al., 2021; Martínez-Sola et al., 2018; Opler et al., 1999), and institutional factors (D. D. Chen et al., 2014; R. Chen et al., 2020; Dittmar et al., 2003; Seifert & Gonenc, 2018) on firm motives to accumulate cash. One of the institutional factors that have been receiving growing attention in the literature is

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corruption, employed as a proxy for the threat of political extraction (Boubakri et al., 2013; Caprio et al., 2013; Thakur & Kannadhasan, 2019; Tran, 2020). This literature shows that firms have incentives to reduce the costs of corruption either by structuring their assets to protect them from expropriation or by taking advantage of a corrupt environment by paying for political favours. This study attempts to advance our understanding of the impact of corruption on firm cash reserves using the context of the Gulf Cooperation Council (GCC) countries.

Most empirical studies on cash holdings focus on firm-specific factors with some contributions that examine institutional factors (see the literature review section for a detailed discussion). In addition, the study of the threat of political extraction as an important institutional factor is limited and usually focuses on single-country experiences (Cai et al., 2021; Kusnadi et al., 2015; Smith, 2016; Xu & Li, 2018). Furthermore, studies that examine the impact of national-level corruption on cash holdings are less focused on emerging market economies (Thakur & Kannadhasan, 2019; Tran, 2020) and none of those studies has examined the case of the GCC countries. The economic and financial structures of emerging and developed markets vary considerably which limits the ability to generalize the results of studies on developed markets to emerging markets (Tayeh et al., 2015; Tayem, 2022). For example, firms operating in emerging markets may find it difficult to deter political extraction compared to developed markets (Fisman & Svensson, 2007; Svensson, 2003). In addition, the empirical literature regarding the relationship between corruption and cash holdings is inconclusive and failed to establish consistent results (see the literature review section). One reason for this inconsistency relates to the considerable variation in the economic and financial structures of developing markets.

The GCC countries are characterized by several unique settings that are expected to affect firm motives to accumulate cash. First, all the six countries comprising the GCC are monarchies where the state have heavy direct involvement in economic activity (Kaya & Tsai, 2016). Therefore, state ownership through state-owned conglomerates, investment authorities, and state-run funds is widespread (Abdallah & Ismail, 2017; Kaya & Tsai, 2016; Santos, 2015). Second, private-sector wealth is concentrated and family ownership in the GCC countries is common (Eulaiwi et al., 2016; Martínez-García et al., 2021; Santos, 2015). Third, the business class has close ties with the sovereigns and the state (Hanieh, 2018; Santos, 2015). Historically, the business class in the GCC countries was formed from tribes that offered support to rulers in exchange for exclusive licenses and business contracts (Hanieh, 2018). Furthermore, the business class benefits from free or reduced taxes, energy subsidies in the form of cheap state-provided energy, and state-led investment opportunities in new sectors (Hertog, 2013). Therefore, it is likely that these settings affect firms' cash policy by inducing them to hoard liquid assets which can be used to pay for political favours.

Therefore, this study attempts to address this gap in the literature by examining the relationship between corruption and cash holdings utilizing the context of the GCC emerging countries. Specifically, this study poses the following question: Do higher levels of corruption incentivize firms operating in the GCC countries to accumulate or reduce cash holdings? To answer this question, the study develops a cash model augmented with a corruption Indicator and employs the frameworks of seminal theoretical views including the trade-off (Opler et al., 1999), pecking order/financing hierarchy (Almeida et al., 2004; Myers & Majluf, 1984), uncertainty (Bates et al., 2009; Goodell et al., 2021), and agency and governance (Dittmar et al., 2003) to guide the choice of control variables. Analyzing firm-level financial data and institutional-level data using static and dynamic panel data estimation methods, the results of this study show that institutional characteristics related to corruption exert a positive impact on the level of cash holdings suggesting that firms operating in the GCC countries are likely to make political payoffs. In addition, the results relating to firm-specific characteristics are consistent with the predictions of trade-off and financing hierarchy explanations of cash holdings.

This study contributes to the extant literature in several ways. It contributes to the literature on the impact of institutional factors on firm policies by exploring the impact of corruption on cash holdings (Caprio et al., 2013; Seo & Han, 2021; Thakur & Kannadhasan, 2019; Tran, 2020) utilizing for the first time the context of the GCC emerging markets. It also contributes to the literature on the determination of cash holdings by examining cash holdings in the context of the GCC countries, a cash-rich region. A corporation operating in the GCC countries holds average cash to total assets of 12.6% which is larger than the average cash held by corporations in the region. For example, average cash ratios of 4.3%, 6.3%, and 9.1% are reported from Arab MENA countries (Al-Najjar & Clark, 2017), Jordan (Tayem et al., 2019) and Turkey (Uyar & Kuzey, 2014), respectively. Furthermore, the extant study contributes to the growing empirical evidence on the motives of corporations in the GCC countries to hold cash. Extant empirical evidence from the GCC countries examines the impact of board characteristics (Al-Najjar & Clark, 2017), board investment committees (Al-Hadi et al., 2020), IFRS adoption (S. Ozkan et al., 2019), precautionary motives (Guizani & Ajmi, 2021) and Sharia' compliance (Bugshan et al., 2021) but not the threat of political extraction.

The next section reviews the literature on the determinants of cash holdings. Section 3 presents the research methodology and data. Results and their discussion are presented in Section 4 and Section 5, respectively. The conclusion is presented in Section 6.

2. Literature review and hypotheses development

2.1. Cash holdings and firm-level characteristics

The seminal study of Opler et al. (1999) on firm-level determinants of cash holdings identifies two views on firm motives to hold cash, the trade-off and financing hierarchy. Both views assume that capital markets are imperfect hence firms cannot adjust their capital structures costlessly to meet unexpected periods of insufficient resources. Instead, firms store liquidity to respond in a timely fashion to unexpected changes to their cash flows or set of investment opportunities (Almeida et al., 2014). The trade-off view of cash holdings suggests that firms maximize their value by choosing an optimal level of cash that balances the marginal costs and benefits of holding cash (Opler et al., 1999). On the other hand, the financing hierarchy explanation of cash holdings suggests that firms facing information asymmetries maintain a surplus of internal funds that can be used to provide financial flexibility (Almeida et al., 2014; Opler et al., 1999). This is because in the presence of information asymmetry external financing becomes costlier than internal resources (Myers & Majluf, 1984).

Early research on firm-level determinants of cash holdings finds compelling evidence that supports the predictions of the trade-off and financing hierarchy views using the context of the US (Opler et al., 1999) and other developed countries such as the UK and European countries (Ferreira & Vilela, 2004; Guney et al., 2007; A. Ozkan & Ozkan, 2004). Another wave of research was concerned with examining the predictions of the trade-off and financing hierarchy views for non-public firms such as private firms (Bigelli & Sánchez-Vidal, 2012; Potì et al., 2020) and small and medium enterprises (Martínez-Sola et al., 2018). In addition, the study of the relationship between cash and credit constraints received considerable attention with the view that financially constrained firms will save more cash from their cash flows (Almeida et al., 2004) which motivated the work that examines the impact of lines of credit and lending relations on cash holdings (Acharya et al., 2013; Shikimi, 2019; Sufi, 2009). Furthermore, the view that firms save cash for precautionary reasons motivated the study of the impact of uncertainty on cash holdings. For example, Bates et al. (2009) document the general rise in cash holdings in US firms and attribute it to the greater volatility of cash flows caused by the high research and development (R&D) intensity. This led to the development of research that focuses on the impact of uncertainty caused by firm-specific or macro-conditions (Goodell et al., 2021; Phan et al., 2019).

In addition, the framework of agency and governance is employed to examine firm motives to hold cash. Traditionally, studies focus on the conflict between managers and shareholders with the

prediction that managers are less inclined to distribute excess cash to avoid the scrutiny of capital markets (Jensen, 1986). The US evidence supports the prediction that cash holdings are positively related to weakly governed firms (Harford et al., 2008). Research from emerging markets also expands on this issue by studying the impact of different aspects of governance on cash holdings. For example, studies examine the relationship between cash and characteristics relating to the board of directors (Al-Hadi et al., 2020; Al-Najjar & Clark, 2017; Eulaiwi et al., 2016), ownership concentration (Tayem et al., 2019) and firm identity (R. Chen et al., 2018).

2.2. Cash holdings and institutional characteristics

Although the literature on the determinates of cash holdings focuses mainly on firm-specific factors, important contributions deal with the impact of institutional factors on a firm decision to accumulate cash. These factors include investor protection, securities law, governance, and corruption. Dittmar et al. (2003) and Kalcheva and Lins (2007) suggest and find that in countries with better investor protection firms retain less cash to reduce the threat of expropriation by managers. Iskandar-Datta and Jia (2014) find that in countries with poor investor protection firms are likely to engage in empire-building behaviour. Similarly, D. D. Chen et al. (2014) show that corporate liquidity is lower in countries with more effective securities laws. Evidence in Seifert and Gonenc (2018) shows that country-level governance measures are associated with lower cash holdings, while R. Chen et al. (2020) find that firms reduce their cash holdings significantly following board reforms.

The literature also suggests that corruption is an important institutional factor that affects cash and other liquid assets. Firms have the choice of following two strategies that can reduce the costs of political extraction but will ultimately influence their cash levels. They can “shelter assets” to protect them from expropriation or use them to “make political payoffs” (Caprio et al., 2013). Previous research shows that liquid assets are easy to expropriate (Jensen, 1986) and state officials can extort firms through different channels such as complex regulations and targeted taxation (Svensson, 2003). Therefore, firms can restructure their assets by holding less liquid assets to avoid the extraction of cash (Boubakri et al., 2013; Caprio et al., 2013). Several key empirical studies support the shielding hypothesis which suggests that measures of corruption are negatively related to firm cash holdings. Caprio et al. (2013) use firm-level data from 109 countries and find that corporate holdings of liquid assets are negatively related to measures of political corruption. Smith (2016) finds that corruption on the part of political officials in a federal judicial district in the US, measured by corruption convictions at the judicial district level, is negatively related to cash holdings. Kusnadi et al. (2015) suggest that for non-state-controlled Chinese firms, more developed institutions mitigate the threat of political extraction resulting in larger cash holdings among those firms. Xu and Li (2018) find that firms located in more corrupt regions in China hold less cash while Cai et al. (2021) report that Chinese firms increase their cash holdings significantly after incidents of investigating top government officials in the respective municipalities of those firms. Hence, this study tests the shielding assets hypothesis as stated in H1:

H1. Firms operating in countries with a greater level of corruption will have lower cash holdings

The second hypothesis concerning the impact of corruption on cash holdings suggests that in corrupt environments firms cannot successfully deter political expropriation (Fisman & Svensson, 2007; Svensson, 2003). Hence, firms take advantage of corrupt environments to acquire political favours (Ayyagari et al., 2014; Cheung et al., 2012) and reserve enough cash needed for purposes of bribery while at the same time preserving their financial flexibility (Caprio et al., 2013; Thakur & Kannadhasan, 2019). This hypothesis suggests that measures of corruption are positively related to firm cash holdings. Empirical studies supporting this hypothesis include Thakur and Kannadhasan (2019) which focus on 16 emerging markets

and find that cash holdings are positively related to corruption suggesting that firms benefit from the corrupt environment by trading cash. Similarly, Tran (2020) finds evidence from 46 countries indicating that corruption is positively related to cash. Hence, this study tests the political payoff hypothesis as stated in H2:

H2. Firms operating in countries with a greater level of corruption will have higher cash holdings.

3. Research design, variables, and data

3.1. Model and variables

To empirically test the predictions of the study hypotheses, a cash holdings model was developed with corruption as the main explanatory variable of interest. H1, the shielding assets hypothesis, predicts a positive impact of corruption on cash holdings, while H2, the political payoff hypothesis, predicts a negative impact. The cash model developed in line with the literature (Thakur & Kannadhasan, 2019; Tran, 2020) is specified in equation 1:

$$CASH_{jit} = \gamma CORRUP_{jt} + \sum_k \beta_k X_{kjit} + \sum_m \delta_m Z_{mjt} + e_{it} \quad (1)$$

where j refers to country, i firm, and t time. CASH is defined as cash divided by total assets. The analysis utilizes another measure of cash defined as cash divided by net total assets (total assets minus cash) as an alternative measurement of CASH as a robustness check.

CORRUPT is the proxy of the threat of political extraction and is measured using the World Bank's control of corruption index (Thakur & Kannadhasan, 2019; Tran, 2020). World Bank's control of corruption captures the perception of control of corruption in an economy and is coded as an estimate ranging between -2.5 to 2.5. Smaller values of control of corruption indicate higher corruption (lower control of corruption) while higher values indicate lower corruption (higher control of corruption). For ease of presentation, the descriptive statistics present the values of control of corruption as sourced from the World Bank. However, the reversed values of control of corruption are used in the regression analysis (Thakur & Kannadhasan, 2019) with higher values indicating higher corruption hence a positive coefficient of CORRUPT suggests a positive impact of corruption on cash holdings

X is a matrix of k firm-level characteristics that include firm size (SIZE), cash substitutes (SUB), leverage (LEV), capital expenditures (CAPEX), dividends (DIV), growth opportunities (GROWTH), cash flow (FLOW) and cash flow volatility (VOL). According to the trade-off theory, firm size can be negatively related to cash because large firms enjoy the benefits of economies of scale and higher information visibility which enable them to issue external finance instead of accumulating cash (Opler et al., 1999), or positively related to cash as large firms are likely to hoard more cash because of their success (A. Ozkan & Ozkan, 2004). In addition, the trade-off theory, expects cash substitutes to be negatively related to cash because firms use other liquid assets in case of cash shortfalls, implying that these assets substitute cash holdings (Guney et al., 2007; Opler et al., 1999). Based on the financing hierarchy framework, leverage is expected to be negatively related to cash because firms consider cash holdings and leverage as alternatives. Firms with internal resource surplus use these resources to repay debt or save cash while firms in deficit exhaust their cash or issue debt which implies a negative relation between leverage and cash holdings (Opler et al., 1999). Further, the financing hierarchy view expects cash flows, growth opportunities, and volatility to be positively related to cash. This is because firms prefer internal resources to external finance in the presence of information asymmetry hence firms have incentives to save cash from their cash flows, especially the ones subject to large information asymmetries such as firms with greater growth opportunities and volatile cash flows (Almeida et al., 2004; Bates et al., 2009; Martínez-Sola et al., 2018). Capital expenditures and dividends can be negatively related to cash as firms exhaust their internal resources the larger those flows or positively related to cash as firms anticipating larger flows accumulate cash to reduce transaction costs of

Table 1. Summary of variable definitions

Variable	Proxy	Sign
Firm size (SIZE)	The natural logarithm of total assets (total assets are measured in US dollars).	+/-
Cash Substitutes (SUB)	Current assets minus cash divided by total assets.	-
Debt Ratio (LEV)	The total of long and short-term borrowings divided by total assets.	-
Capital Expenditures (CAPEX)	Capital expenditures divided by total assets at the beginning of the period.	+/-
Dividends (DIV)	Dividends in dollar value divided by total assets.	+/-
Growth Opportunities (GROWTH)	The market to book value ratio (MTB) is calculated as the market value of equity plus the book value of assets minus the book value of equity divided by assets.	+
Cash flows (FLOW)	Earnings before interest, taxes, and depreciation divided by total assets.	+
Cash Flows Volatility (VOL)	The standard deviation of cash flows (earnings before interest, taxes, and depreciation) over a lagged four-year period.	+
Threat of Political Extraction (CORRUPT)	This variable is measured by the World Bank's Control of Corruption index which captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. The definition is obtained from the World Bank.	+/-
Investor Protection (LAW)	This variable is measured by the World Bank's Rule of Law index which captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. The definition is obtained from the World Bank.	-
GDP Growth (GDP)	Growth in GDP.	+/-
Private Credit to GDP (CREDIT)	The ratio of total private credit divided by GDP.	-

Table 1 summarizes variable operational definitions and their expected sign based on the discussion presented in Section 3.1.

issuing capital (Opler et al., 1999). Z is a matrix of m institutional characteristics that include rule of law (LAW) as a measure of investor protection (Seifert & Gonenc, 2018), and macro-level data, namely GDP growth (GDP) and private credit to GDP ratio (CREDIT) to control for country-wide variation. Operational definitions of the variables and their expected signs are presented in Table 1.

Estimation methods

This paper follows several key studies that examine the impact of country-level corruption on firm-level cash holdings by estimating equation (1) using pooled OLS augmented by country, industry and year effects to control for unobservables that are not captured by control variables (Caprio et al., 2013; Tran, 2020). In addition, the analysis corrects standard errors for heteroscedasticity using robust standard errors and clusters them by firm to arrive at unbiased coefficients (Thakur & Kannadhasan, 2019). Further, several studies report evidence of the existence of a target level of cash holdings and estimate the speed of adjustment to that target (Martínez-Sola et al., 2018; A. Ozkan & Ozkan, 2004). These include studies on corporate cash holdings in the GCC countries that document a significant impact of a lagged cash variable and estimate the equation using the Generalized Methods of Moments (GMM; Bugshan et al., 2021; Guizani & Ajmi, 2021). Therefore, in this study the estimation includes a lagged value of cash to account for the firm dynamic adjustment towards optimal cash holdings level and applies the system GMM.

3.3. Sample, data sources and data description

The sample consists of non-financial publicly traded companies from the GCC countries over the period 2007–2017. The GCC countries include (in alphabetical order): Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. Sample firms are listed on the following stock exchanges: Bahrain Bourse, Boursa Kuwait (formerly the Kuwait Stock Exchange), Muscat Securities Market, Qatar Stock Exchange, Saudi Stock Exchange (Tadawul), Dubai Financial Market, and Abu Dhabi Securities Exchange. The firm-level financial data is obtained from DtataStream. Financial companies are excluded because of their different asset structure and because their liquidity is partially regulated (Smith, 2016). Country-level institutional and macro-economic data is obtained from the World Bank data bank. The study sample period starts based on the consistent coverage of GCC companies in the DtataStream database and ends in 2017.

Table 2. Summary statistics by country

	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	United Arab Emirates
Observations (Number)	86	419	398	126	406	262
Companies (Number)	14	70	77	20	74	40
Average Assets (USD thousands)	351,833	875,136	181,265	3,611,755	4,283,835	3,275,866
Average Cash (USD thousands)	61,868	91,549	17,745	617,997	609,129	377,586
Macro and Institutional Indicators (Averages)						
CORRUPT	0.184	−0.073	0.251	1.019	0.028	1.115
LAW	0.397	0.302	0.480	0.832	0.135	0.593
GDP	3.698	1.512	4.127	6.645	3.850	3.553
CREDIT	69.345	74.074	51.419	55.563	44.887	70.813
CASH						
Mean	21.92%	15.70%	9.93%	14.48%	10.11%	11.27%
Median	20.83%	10.30%	5.71%	12.18%	6.00%	8.14%
SD	0.138	0.168	0.112	0.104	0.104	0.103
Min	0.004	0.001	0.000	0.003	0.001	0.002
Max	0.578	0.874	0.611	0.492	0.665	0.531

Table 2 reports summary statistics by country. Variables are defined in Table 1.

Table 3. Summary statistics of firm characteristics

	Mean	Median	SD	Min	Max
CASH	0.126	0.083	0.130	0.000	0.874
SIZE	12.619	12.638	1.907	5.996	18.321
SUB	0.277	0.220	0.205	0.002	0.919
LEV	0.213	0.177	0.188	0.000	0.887
CAPEX	0.040	0.026	0.055	0.000	0.755
DIV	0.058	0.034	0.079	0.000	1.051
GROWTH	1.383	1.176	0.796	0.290	8.338
FLOW	0.069	0.068	0.092	-0.625	0.761
VOL	0.039	0.024	0.044	0.001	0.435

Table 3 reports firm-level descriptive statistics for a sample of non-financial firms operating in the GCC countries. Variables are defined in Table 1.

The year 2017 brought a wide range of political and economic changes in the GCC countries. These changes are expected to influence country-level institutional settings hence the impact of corruption on firm incentives to accumulate cash. Also, the computation of VOL led to the loss of some observations as the computation of this variable requires data from the previous three years. Table 2 presents summary statistics by country.

Next, the summary statistics of firm characteristics are presented in Table 3 and their correlation coefficients are presented in Table 4. Table 3 shows that the mean value of CASH is 12.6% indicating that the average corporation in the GCC countries holds relatively large cash reserves. In addition, the CASH ratio of the 75th percentile firm (not reported) is 17.3% indicating a large amount of cash held by these corporations.

The correlation coefficients between cash and its expected determinants carry their expected signs. GROWTH, FLOW, and VOL are all positively and significantly correlated with CASH while ASSETS, SUB, and LEV are all negatively and significantly correlated with CASH. DIV is positively and significantly correlated with CASH while CAPEX is negatively and significantly correlated with CASH.

4. Results

Table 5 reports the cross-country results of estimating equation (1) with firm-level determinants controlling for country, industry, and time effects. The standard errors are estimated using robust standard errors and are clustered by firm. Table 5 reports the estimation results using four estimation methods for purposes of completion. However, as the results are consistent across all estimations, the focus of the discussion will be on the ones produced by the GMM estimation method reported in the last column. The estimation results show that the lagged cash variable, $CASH_{t-1}$, is statistically significant at the 1% level which suggests that the dynamic nature of the model is not rejected. This finding is consistent with the results reported by several studies which document the existence of a target level of cash holdings in developed countries (Martínez-Sola et al., 2018; A. Ozkan & Ozkan, 2004) and the GCC countries (Bugshan et al., 2021; Guizani & Ajmi, 2021).

In terms of firm-level determinants, the results show that firm size, SIZE, is insignificantly related to the level of cash holdings which indicates that transaction and information costs arising from firm size do not significantly affect the firm cash policy. Consistent with the trade-off theory predictions, cash substitute, SUB, is negatively and significantly related to CASH at the 1% level and LEV has the predicted negative sign but is insignificantly related to CASH. These findings support the argument that firms regard liquid assets other than cash and firm access to debt as alternatives to cash holdings. Further, the results show that dividend-paying firms in the GCC

Table 4. Correlation matrix between measures of firm characteristics

	CASH	SIZE	SUB	LEV	CAPEX	DIV	GROWTH	FLOW
SIZE	-0.129 (0.000)							
SUB	-0.256 (0.000)	-0.215 (0.000)						
LEV	-0.399 (0.000)	0.333 (0.000)	0.065 (0.007)					
CAPEX	0.262 (0.000)	0.026 (0.284)	-0.104 (0.000)	-0.331 (0.000)				
DIV	-0.095 (0.000)	0.059 (0.015)	-0.098 (0.000)	0.076 (0.002)	-0.008 (0.742)			
GROWTH	0.163 (0.000)	-0.017 (0.486)	0.013 (0.585)	-0.170 (0.000)	0.517 (0.000)	0.137 (0.000)		
FLOW	0.177 (0.000)	0.113 (0.000)	-0.066 (0.007)	-0.229 (0.000)	0.582 (0.000)	0.109 (0.000)	0.406 (0.000)	
VOL	0.091 (0.000)	-0.257 (0.000)	-0.016 (0.523)	-0.081 (0.001)	-0.028 (0.242)	-0.052 (0.034)	-0.031 (0.198)	-0.253 (0.000)

Table 4 reports the correlation between firm-level variables for a sample of non-financial firms operating in the GCC countries. Variables are defined in Table 1. *p*-values are in parentheses.

Table 5. Estimation results of the cash model—Firm-specific determinates

	OLS	Fixed Effects	Random Effects	GMM
SIZE	−0.007 (−1.40)	0.002 (0.26)	−0.005 (−1.23)	0.002 (0.19)
SUB	−0.125*** (−3.56)	−0.349*** (−5.08)	−0.258*** (−5.53)	−0.432*** (−3.75)
LEV	−0.132*** (−4.33)	−0.096*** (−3.54)	−0.104*** (−4.80)	−0.050 (−1.15)
DIV	0.219* (1.96)	0.201** (2.30)	0.203** (2.37)	−0.009 (−0.08)
CAPEX	−0.209*** (−3.38)	−0.132*** (−2.77)	−0.134*** (−2.86)	−0.261*** (−6.45)
GROWTH	0.018** (1.99)	−0.002 (−0.26)	0.002 (0.27)	−0.007 (−0.66)
FLOW	0.114** (2.18)	0.133*** (2.71)	0.128*** (2.85)	0.077 (1.55)
VOL	0.133 (1.23)	0.209** (2.22)	0.207** (2.21)	0.116 (1.19)
CASH_{t-1}	–	–	–	0.479*** (5.89)
Time Effects	Yes	Yes	Yes	Yes
Industry Effects	Yes	–	Yes	–
Country Effects	Yes	–	Yes	–
Observations	1697	1697	1697	1118
Groups	295	295	295	246
R²	0.457	0.152	0.41	–
F Test	16.57***			
Hausman Test	54.55***			
Arellano-Bond test for AR(2)	−0.741			

Table 5 reports the estimation results of the cash model using four alternative estimation methods for a sample of non-financial firms operating in the GCC countries. Variables are defined in Table 1. *t*-statistics (alternatively *z*-statistics) are in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% respectively.

countries accumulate cash to avoid shortages of internal cash flows that are insufficient to pay dividends but the relationship is statistically insignificant. The results are also consistent with the predictions of the financing hierarchy theory. Capital expenditures, CAPEX, are negatively and significantly related to CASH at the 1% level which suggests that firms that spend more on capital expenditures exhaust their internal resources and hence these firms would accumulate less cash. However, FLOW, GROWTH, and VOL are not significantly related to CASH in the dynamic model. Nonetheless, the reported results from the static model show support for the predictions of the financing hierarchy view on firm behaviour in the presence of information asymmetry. GCC firms accumulate more cash the larger their internal resources, the greater their growth opportunities, and the higher the volatility of their cash flows face more information asymmetry problems. Appendix A1 reports the results of estimating the firm-level cash model for individual GCC countries, and the results are similar to the ones described above.

Taken together, the results indicate that the incentives of GCC corporations to accumulate cash are influenced by the transaction and precautionary motives as predicted by the trade-off and financing hierarchy views of cash holdings. The findings reported in this article are consistent with the evidence reported from major developed countries (Bigelli & Sánchez-Vidal, 2012; Martínez-Sola et al., 2018; Opler et al., 1999) and the evidence from the MENA countries (Al-Hadi et al., 2020; Al-Najjar & Clark, 2017; Bugshan et al., 2021; Guizani & Ajmi, 2021; Tayem, 2017).

Table 6. Estimation results of the cash model with corruption

	OLS			GMM			
	Cash			Cash			Net Cash
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
CORRUPT	0.036** (2.46)	0.042** (2.47)	0.026* (1.72)	0.055** (2.15)	0.058** (2.32)	0.042** (2.20)	0.106** (2.00)
LAW	–	0.035 (1.08)	0.054* (1.75)	–	0.003 (0.15)	0.010 (0.45)	0.099 (1.09)
GDP	–	–0.001 (–0.68)	–0.001 (–0.80)	–	0.0003 (0.34)	0.0007 (0.09)	0.001 (0.52)
CREDIT	–	0.001 (1.23)	0.002*** (3.10)	–	0.0003 (0.65)	0.001 (1.13)	–0.001 (–0.65)
SIZE	–	–	–0.005 (–1.13)	–	–	0.002 (0.15)	–0.157** (–2.42)
SUB	–	–	–0.130*** (–3.69)	–	–	–0.428*** (–3.74)	–1.130*** (–2.74)
LEV	–	–	–0.141*** (–4.71)	–	–	–0.047 (–1.06)	0.029 (0.28)
DIV	–	–	0.209* (1.88)	–	–	–0.007 (0.06)	0.462 (1.05)
CAPEX	–	–	–0.215*** (–3.39)	–	–	–0.265*** (–6.39)	–0.347*** (–3.71)
GROWTH	–	–	0.017* (1.87)	–	–	–0.007 (–0.68)	–0.023 (–0.89)
FLOW	–	–	0.110** (2.09)	–	–	0.074 (1.49)	0.126 (0.98)
VOL	–	–	0.157 (1.48)	–	–	0.115 (1.17)	0.375* (1.71)
CASH_{t-1}	–	–	–	0.555*** (6.40)	0.553*** (6.49)	0.499*** (6.15)	0.424*** (6.99)
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	–	–	–	–
Country Effects	Yes	Yes	Yes	–	–	–	–
Observations	1697	1697	1697	1118	1118	1118	1118
Groups	295	295	295	246	246	246	246
R²	0.3138	0.3152	0.4538	–	–	–	–
Arellano-Bond test for AR(2)	–	–	–	0.198	0.209	–.738	–1.026

Table 6 reports the estimation results of the cash model with corruption using OLS robust standard errors clustered by firm in the first three models and GMM robust standard errors in the fourth and fifth columns. The estimation uses net total assets (assets minus cash) to compute a variation of the CASH and SIZE variables in the specification reported in column 5. Variables are defined in Table 1. t-statistics (alternatively z-statistics) are in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% respectively.

Table 6 reports the results of estimating the impact of CORRUPT on cash holdings using various specifications and estimation methods. Columns 1–3 in Table 6 report the results of OLS estimation with country, industry and time effects and robust standard errors clustered by firm (Caprio et al., 2013; Thakur & Kannadhasan, 2019; Tran, 2020) for three different specifications. The first specification presents the results of regressing corruption on cash holdings, the second includes other country-level variables and the third adds firm-level determinants. In addition, columns 4–6 replicate the specifications reported in columns 1–3 but use the GMM estimation to account for the dynamic nature of the model. The findings indicate that CORRUPT is positively related to CASH at the 5% level. This result is consistent with the participation hypothesis which suggests that firms

hoard cash to make political payoffs in exchange for political favours. It is also consistent with the evidence reported in Thakur and Kannadhasan (2019) and Tran (2020). In terms of other country-level variables, none of those variables have a significant impact on the level of cash holdings using the GMM estimation method. Finally, to gauge the robustness of the results to changes in the computation of the CASH variables, the study utilizes an alternative measurement of CASH computed as cash over net total assets. The results show that CORRUPT is positively and significantly related to this measure of cash.

5. Discussion

The main finding of this article indicates that the threat of political extraction, approximated by the control of corruption index, exerts a significantly positive impact on cash holdings in corporations operating in the GCC countries which is consistent with the evidence reported in Thakur and Kannadhasan (2019) and Tran (2020). This result suggests that firms in the GCC countries benefit from the corrupt environment by accumulating more liquid assets that can be used to make political payoffs in exchange for political favours (Caprio et al., 2013). Businesses dealing with corruption have the option to “shelter assets” or make “political payoffs” depending on their respective marginal benefits and costs. For example, sheltering assets protect liquid assets from political extraction but reduce firm financial flexibility while accumulating cash to make a political payoff is costly but can attract future investment projects and increase firm financial flexibility (Boubakri et al., 2013; Caprio et al., 2013). The results of this paper suggest that payoffs from obtaining political favours and from securing financial flexibility through having large cash reserves outweigh the costs of political extraction in the GCC countries. Country context can play an important role in increasing (decreasing) the value of the two strategies and hence affect the firm choice of the level of cash holdings. Like many emerging markets, corporations in the GCC countries find it difficult to deter political extractions (Fisman & Svensson, 2007; Svensson, 2003). In addition, corporations in the GCC countries have high ownership concentration, are ultimately owned by the state or family and have strong ties with the state and sovereigns (Hanieh, 2018; Martínez-García et al., 2021; Santos, 2015). This will likely align state and firm incentives which will result in increasing the value of making political payoffs hence the positive impact of corruption on cash holdings.

The central finding of this study in terms of the impact of corruption on cash holdings has implications for research, businesses and policy. In terms of academic research, the findings suggest that corruption is an important determinant of firm cash holdings and future models of corporate liquidity should consider the inclusion of this variable. In terms of businesses, the findings suggest that value-maximizing firms should consider the costs and benefits of the two strategies that they can follow to deal with corruption when deciding the optimal level of cash. This is especially important for multinational corporations (MNCs) that face different sets of political risks than their domestic counterparts. Finally, policymakers can find the results of this study useful as they indicate that corruption distorts firm incentives and affects its financial policies. Hence, policymakers can encourage regulations that reduce different aspects of corruption to reduce its negative impact. Future research can focus on forming a theoretical model that specifies the conditions that determine a firm choice of sheltering assets or making political payoffs. This is especially useful for the research on emerging markets as the results of this paper indicate that the impact of corruption on cash is positive which suggests that corporate GCC is better off making political payoffs. In addition, future research can focus on MNCs’ decision to hold cash those firms face different sets of political risks. For example, MNCs are subject to the risks of political retaliation but they may have greater bargaining power due to their larger size and global influence.

6. Conclusion

This study contributes to the extant literature on the determination of cash holdings by examining the views of cash holdings in the context of the GCC, a cash-rich region. Examining this issue in the context of the GCC countries is interesting because conflicts resulting from political extractions

between the state and firms in those countries are likely to exert a significant positive impact on the level of cash holdings thus enabling corporations to hoard significant amounts of cash. The results of this study show that institutional characteristics relating to corruption exert a positive significant impact on the level of cash holdings. On the other hand, results relating to firm-specific characteristics are consistent with the predictions of the theoretical frameworks of the trade-off and financing hierarchy explanations of cash holdings. First, consistent with the trade-off theory, the findings indicate that firms with large other liquid assets accumulate lower cash holdings. Second, this study finds evidence consistent with the financing hierarchy view as the results show that there is a negative and significant impact of capital expenditures on cash holdings.

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Appendix

Table A1. Cash model for individual GCC countries

	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	United Arab Emirates
SIZE	0.058 (1.40)	-0.002 (-0.12)	-0.020** (-2.00)	0.033*** (8.73)	0.020 (1.61)	0.013 (0.80)
SUB	-0.677*** (-4.81)	-0.224** (-2.10)	-0.207*** (-3.60)	-0.210** (-2.59)	-0.387*** (-3.27)	-0.243* (-1.89)
LEV	-0.008 (-0.02)	-0.057 (-1.06)	-0.103*** (-3.21)	-0.106* (-1.74)	-0.196*** (-3.07)	-0.157* (-1.91)
DIV	-0.164 (-0.11)	0.406*** (3.13)	-0.041 (-0.23)	-0.654** (-2.51)	0.080 (0.49)	0.140 (1.09)
CAPEX	-0.301 (-1.22)	-0.184*** (-3.09)	-0.146*** (-3.16)	0.124 (0.88)	-0.063 (-0.62)	-0.252*** (-3.09)
GROWTH	-0.017 (-0.22)	0.005 (0.37)	0.021 (1.28)	0.022 (1.02)	-0.015 (-1.26)	-0.004 (-0.22)
FLOW	-0.005 (-0.02)	0.153** (2.15)	0.180** (2.57)	0.812*** (3.59)	0.159 (1.30)	0.052 (0.70)
VOL	-0.386 (-0.72)	0.207 (1.39)	0.225 (1.60)	-0.547 (-0.85)	0.475** (2.28)	0.129 (0.76)
Observations	86	419	398	126	406	262
Groups	14	70	77	20	74	40
R² (Overall)	0.873	0.583	0.552	0.749	0.323	0.50

This table reports the estimation results of the cash model for individual GCC countries using the random effects model. The estimation includes year and industry effects. Variables are defined in Table 1. z-statistics are in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% respectively.



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