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Cash Holdings in Shariah-Compliant Firms: Empirical Study

¹ Mai Ali Mohammed Weheba

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¹ PhD Researcher, Accounting Department, Faculty of Commerce, Tanta University

Abstract

The purpose of this study is to investigate the determinants of cash holdings of Shariah compliant firms, for non-financial corporations in market of the Gulf Cooperation Council (GCC). The analyzed data include non-financial firms listed in of GCC markets over a period 2015–2022. The Idea Ratings database is used to identify Shariah-compliant firms in the GCC. To examine the determinants of cash holdings, liner regression model is used. The results show that, for Shariah-compliant firms, the relevant determinants of cash holdings are capital expenditure, Size, Dividend payments, Liquidity, leverage, growth opportunities and profitability. The findings suggest that the cash holding decisions of Shariah-compliant firms can be best explained using the pecking order theory. This reveals that Shariah-compliant firms use liquid assets as their first financing option, due to the Shariah regulations.

Keywords: Cash holdings, financial determinants, Shariah compliance, Islamic finance, Gulf Cooperation Council.

المخلص

تهدف هذه الدراسة إلى التعرف على محددات الحيازات النقدية للشركات غير المالية المتوافقة مع الشريعة الإسلامية في أسواق دول مجلس التعاون الخليجي. ولوصول الي هدف الدراسة تم الاعتماد على الدراسات السابقة لمجالي البحث الحيازات النقدية والتمويل الإسلامي وكذلك النظريات الاقتصادية في صياغة البناء النظري الخاص بالدراسة وفروض البحث. ولاختبار تلك الفروض احصائيا تم الاستعانة بقاعدة بيانات Idea Ratings لتحديد الشركات المتوافقة مع أحكام الشريعة الإسلامية في دول مجلس التعاون الخليجي وكذلك بيانات الشركات غير المالية المدرجة في أسواق دول مجلس التعاون الخليجي خلال الفترة ٢٠١٥-٢٠٢٢ بالإضافة الي الاستعانة بنموذج الانحدار الخطي. وبإجراء التحليل اظهرت النتائج أنه بالنسبة للشركات المتوافقة مع أحكام الشريعة الإسلامية فإن المحددات ذات الصلة للحيازات النقدية هي النفقات الرأسمالية، والحجم، ودفعات أرباح الأسهم، والسيولة، والرافعة المالية، وفرص النمو والربحية. وتشير النتائج إلى أن قرارات الاحتفاظ بالنقدية التي تتخذها الشركات المتوافقة مع الشريعة الإسلامية يمكن تفسيرها بشكل أفضل باستخدام نظرية الترتيب الهرمي. وخلصت الدراسة الى ان فالشركات المتوافقة مع الشريعة الإسلامية تستخدم الأصول السائلة كخيار التمويل الأول لها وذلك بسبب ضوابط الشريعة الإسلامية.

الكلمات المفتاحية: الحيازة النقدية، المحددات المالية، المتوافقة مع الشريعة الإسلامية، التمويل الإسلامي، مجلس التعاون الخليجي.

1- Introduction

Corporate cash holdings research has been largely investigated due to the confirmed importance of firms' liquidity policy. The essence of cash management is to assure everyday normal firms' activities, improve liquidity and control financial resources. There are three evident facts showed the importance of the firms' cash management. Firstly, a substantial increase in

cash reserves by firms around the world. Secondly, the relevance of cash holdings among firms' financial decisions. Thirdly, the key role of cash holdings in risk management strategy.

The prior studies investigate the determinants of corporate cash holdings and showed that firms' cash holdings decisions are related to several firms-specific factors (e.g. Al-Najjar, 2013; Al-Najjar and Belghitar, 2011; Ferreira and Vilela, 2004; Guizani, 2017; Opler et al., 1999;). Also, existing literature confirms that corporate cash holding behavior varies among firms (Gao et al., 2013; Lozano and Yaman, 2020; Ozkan and Ozkan, 2004). However, despite the massive literature on corporate cash holdings determinants, prior literature did not examine the determinants of cash holdings of firms complying with Islamic Shariah principles and regulations. Therefore, the present aims to fill this gap by investigating whether the determinants commonly applied to corporate cash holdings in Shariah-compliant firms (Hakim, et al.,2021).

This study extends the existing literature in the following ways. Firstly, it combined two aspects of the literature that have usually been examined separately (i.e. cash holdings and Islamic finance). Secondly, this study investigated the determinants of corporate cash holdings for Shariah-compliant firms. Thirdly, this paper examines if the determinants of corporate cash holdings that were applied in prior studies suitable for Shariah-complaint firms. The remainder of this paper proceeds as follows. Section 2 examines the relevant existing literature and develops the research hypotheses. Section 3 describes the sample data, variables and methodology used. The results of the study are documented in Section 4, and Section 5 concludes the paper.

2- Theoretical background & Literature review

2-1 Shariah screening guidelines

Islamic Shariah rules and principles impose numerous restrictions on firms interested in the preservation of their compliance status. Such restrictions originate from three primary sources: the Qur'an, the Ijtihad, and the Sunnah. The first restriction concerns the primary business activity of a firm. According to Islamic jurisprudence, a firm's core business activities have to be Halal, as opposed to the activities of those organizations that deal with Haram products or services involving alcohol, weapon production, gambling and financial services (El-Gamal, 2000). The second restriction refers to a firm's source of financing, which is required to be free from Riba. Firms are not permitted to use interest-bearing debt instruments such as loans or bonds. According to the Ijtihad, however, several scholars, as well as Shariah boards, have agreed that

a firm's total amount of claims over the previous year should remain below 30% of the market capitalization's total value.

This is also applicable to cash and interest-bearing investments as the total value of these assets have to be below 30% of the firm's total market capitalization value achieved in the previous year. The final restriction concerns the reception of interest from investments or non-compliant business activities. The exception here states that any such interest should constitute less than 5% of a firm's total earnings (Accounting and Auditing Organization for Islamic Financial Institutions, 2010). Such financing restrictions lead to Shariah-compliant firms having limited avenues for accomplishing their financial goals; as a result, these firms cannot access liquidized or long-term financing such as the financing of new projects. Which means that instead of relying on conventional loans, Shariah-compliant firms can use an Islamic finance trade-based mode of financing (Akmalia M. A., et al, 2023).

2-2 cash holdings and theories

holding cash would help the enterprises to maintain liquidity for facing emergencies and taking advantage of investment opportunities, thereby avoiding the need for external financing and preventing the cash shortage caused by loan restrictions and severe financial conditions (Opler et al., 1999). Despite that, there is another view arguing about decreasing the financial power of these cash holdings firms or the waste of investment opportunities due to holding cash. Beside that there are various theories in the literature could explain firms' cash holding decisions. Three influential theories are explaining the cash holding decisions of firms, including the trade-off theory (Myers, 1977), the pecking order theory (Myers and Majluf, 1984) and the free cash flow theory (Jensen, 1986).

2.2.1 Trade-off theory

According to trade-off theory, a company's value is at its highest when its marginal benefits of holding cash are equal to its marginal costs of having cash reserves. The holding of cash drops the probability of facing financial distress, reduces transaction costs and generates more investment opportunities that would have otherwise been unavailable to the company due to financial issues. The primary cost associated with cash holdings is the opportunity cost, or cost-of-carry, which is defined as the difference between the income received from cash holdings and the interest paid on borrowed sums. The shortage of liquid assets and the unavailability of external funds may restrict a firm's ability to

invest in profitable projects, making it more profitable to hold more cash to reduce the likelihood of severe financial distress (Lozano and Yaman, 2020).

2.2.2 The pecking order theory.

Myers (1984) and Myers and Majluf (1984) report that companies tend to follow a pecking order of financing to lower the costs of information asymmetry. Internal sources are used at the start of this pecking order, and companies turn to external sources once internal sources are used up. the companies typically prefer external debt financing over equity issuance because debt comes with smaller information costs than equity financing. Cash is as an outcome of the different financing and investment decisions made throughout the hierarchical financing process.

2.2.3 The free cash flow.

the free cash flow theory suggests that, in case of low investment opportunities, managers choose to stockpile cash to increase their discretionary power. Increasing the total value of assets under their control increases their discretionary power over the firm's future investment decisions. Holding more cash drops the pressure put on managers and allows them to spend money on ventures that align with their own interests rather than those of the investors. Ownership of excess free cash reduces the need for capital markets to raise funds and provide information about future investment projects to the providers of external funds so, the existence of agency problems reduces the value of corporate cash holdings (Dittmar and Mahrt-Smith ,2007).

2-3 Studies of Shariah compliance

The still-growing literature on Islamic corporate finance indicates the Shariah- compliant firms' financial decisions. For instance, [Farooq and Tbeur \(2013\)](#) examined the dividend payouts in Shariah-compliant firms at the MENA markets. The authors found that the former pay more dividends to shareholders than their non-Shariah counterparts. Further, [Naz et al. \(2017\)](#) used a sample of Shariah-compliant firms in the UK and Pakistan between 2001 and 2014. The study documented across several financial decisions, including capital structure, dividends and working capital management. [Yildirim et al. \(2018\)](#) explored the determinants of capital structure among Shariah- compliant firms. The study used a sample from seven different countries and employed a static panel data model. Results showed that some capital structure determinants of Shariah-compliant firms. [Alnori and Alqahtani \(2019\)](#) showed the capital structure decisions and speed of adjustment of Shariah- compliant. The authors found that the level of leverage among the Shariah-compliant firms

is significantly lower than their conventional counterparts. Moreover, Alnori and Alqahtani (2019) and Haron and Ibrahim (2012) asserted that both types of firms have a target leverage ratio. However, Alnori and Alqahtani (2019) documented lower adjustment speeds among Shariah-compliant firms. Bugshan et al. (2021) showed that Shariah-compliant firms hold more cash and adjust faster to their cash target.

2-4 Studies of cash holdings determinants

The finance literature has paid more attention to the determinants of firm cash holding. the pioneering empirical study of Opler (1999) suggested that public firms have high level of cash holding than private one due to the agency costs and conflict. This is in line with Ferreira and Vilela (2004) who found that concentrated ownership and investor protection are important factors affecting the level of cash in corporations. Also, several additional factors have been proven in the literature to be significant in determining the level of cash holdings, such as credit risk, which has been found to exert a positive impact on cash level (Chen et al., 2020). Similar relation was reported with dividend payments, cash conversion cycles, investment opportunity, and firm size (Bigelli and Sánchez-Vidal 2012). In contrast, there is an adverse relationship between bank debt, leverage, asset's liquidity, the interest rates in the economy, concentrated ownership, investor protection, capital markets development, and cash holdings (García-Teruel and Martínez-Solano 2008). There is a growing body of literature highlighting growth opportunity (Opler 1999), bank debt (Ozkan and Ozkan 2004), R&D expenditures (Brown and Petersen 2011; Dittmar et al. 2003), and size (Bigelli and Sánchez-Vidal 2012). Furthermore, studies have examined the determinants of cash holdings in different levels of investor protection markets, and industries (Bates et al. 2009).

The current work aims to contribute to the research of corporate finance and Islamic finance in several dimensions. Firstly, since there have been a few studies conducted about the determinants of cash holdings for Shariah-compliant firms, this research aims to investigate the above-mentioned unanswered research questions. Secondly, the current study will investigate the determinants of cash holdings of Shariah-compliant firms. This will enable the present study to assess whether complying with Islamic principles leads to significant differences in the determinants of cash holdings – an observation that is neglected by the previous studies. Thirdly, this study will test which theory can explain the determinants of cash holdings (El dawayaty 'D. M. A. 2022).

2.5 Hypotheses

In a perfect market, a firm's value does not affect its financial and, subsequently, cash holding decisions (Modigliani and Miller, 1958). However, since there are frictions in markets (i.e. information asymmetry, bankruptcy and transaction costs and taxation), corporate financial decisions – including those related to cash holding – significantly affect the value of firms (Modigliani and Miller, 1963; Opler et al., 1999; Sullivan, 1974). The aforementioned market imperfections may vary widely across different markets and corporations (Al-Najjar, 2013; Clarkson et al., 2020).

Prior Islamic corporate finance studies showed that the financial decisions are different across Shariah-compliant firms due to the restrictions faced by Shariah-compliant firms (e.g. Alnori and Alqahtani, 2019; Haron and Ibrahim, 2012; Naz et al., 2017; Yildirim et al., 2018). Alnori and Alqahtani (2019) argue that the market issues faced by Shariah-compliant firms are affected by Shariah restrictions. As mentioned previously, Shariah-compliant firms are not allowed to cross the leverage threshold of 33% (Yildirim et al., 2018). Hence, the trade-off theory's transaction cost motive and the pecking order theory's information asymmetry have an effect on Shariah-compliant firms since the former suffers from a smaller number of external financing channels (Alnori and Alqahtani, 2019; Yildirim et al., 2018). In terms of cash holdings determinants selection, the research follows partially Opler et al. (1999) and include the following variables: leverage, profitability, capital expenditure, net working capital, firm's size, dividend, growth opportunities.

2.5.1 Leverage

As per the transaction cost motive, highly levered firms face high costs when investing in liquid assets, prompting them to hold less cash (Ferreira and Vilela, 2004; Kim et al., 1998). Al-Najjar (2013) and Cui et al. (2020) indicate that, in emerging markets, bankruptcy-related costs are crucial. The pecking order theory also shows that cash holdings must be reduced with the growth of leverage since insufficient internally generated funds can lead to firms using liquid reserves before they can issue debt; contrariwise, firms with an internal surplus will be capable of paying their own debts. However, according to Jensen's free cash flow argument (1986), payouts such as interest payments decrease the resources available to the management, thus reducing its power while increasing the possibility of capital markets monitoring them. Low-leverage firms, however, are less subject to being monitored, which leads to higher managerial discretion.

Several studies have shown that the extent of financial leverage has an adverse impact on corporate cash holdings (Al-Najjar, 2013; Bhuiyan and Hooks, 2019; Bugshan et al., 2021; Guizani, 2017; Marwick et al., 2020; Opler et al., 1999). Hence, considering the previous empirical findings, the pecking order theory and the trade-off theory, the first hypothesis of the present study is as follows:

H1. There is a relationship between cash holdings and leverage for Shariah-compliant firms.

2.5.2 Profitability

Cash is a result of financing and investment activities. Hence, profitable firms are in a better position to pay dividends, stockpile cash and pay their debt obligations. Conversely, less profitable firms tend to hold less cash and finance their projects by issuing debt. Such firms hesitate to issue equity considering the high costs involved (Al-Najjar and Belghitar, 2011; Ferreira and Vilela, 2004). Similarly, Dittmar et al. (2003) and Yang et al. (2017) state that firms with low cash flows can drawdown their cash while issuing debt for financial investments; however, they do not issue equity as it is too expensive. Therefore, cash holdings have a positive relationship with the profitability of a firm. According to empirical findings and the pecking order theory, the following hypothesis has been proposed:

H2. There is a relationship between cash holdings and profitability for both Shariah-compliant firms.

2.5.3 Capital expenditure

According to the pecking order theory, firms with greater investment expenses will generate less (or no) surplus from internally generated funds to invest in liquid asset reserves, which will result in them holding a smaller number of liquid assets (Opler et al., 1999). Bates et al. (2009) also note that, if capital expenditures lead to the creation of assets, they may work as collateral, increasing a firm's debt capacity while decreasing its cash demand. Several studies found the existence of a negative relationship between capital expenditure and cash holdings in emerging markets (Bugshan et al., 2021; Clarkson et al., 2020; Guizani, 2017).

As per the trade-off theory, however, cash holdings have a positive relationship with the investment level. The theory states that cash holdings can help firms avoid expensive external funds, thus helping them undertake profitable investment projects. As noted by Opler et al. (1999) and Huang et al. (2013), there is a positive coefficient concerning capital expenditures, thus

questioning the direction of the association. The present study notes that capital expenditure is a major determinant of cash holdings despite the lack of any concrete proof of the existence of the relationship between cash holdings and investments. Thus, the third hypothesis is as follows:

H3. There is relationship between cash holdings and capital expenditure for Shariah-compliant firms.

2.5.4 Net working capital

Compared to other assets, the costs involved in the conversion of liquid assets into cash are very low. Hence, firms that have more liquid assets can convert them into cash and are less likely to accumulate a lot of cash. Having liquid assets can result in firms being less dependent on capital markets for gaining cash. Following the trade-off theory, Ferreira and Vilela (2004) state that, in cases of cash shortfall, it can be easy for firms to liquidate their liquid assets and substitute them for cash. Hence, taking the trade-off theory into account, the present study predicts that cash holdings have a negative relationship with liquidity (Al-Najjar, 2013; Al-Najjar and Belghitar, 2011; Bugshan et al., 2021; Guizani, 2017; Ozkan and Ozkan, 2004; Ramezani, 2011). Thus, the next hypothesis can be formulated as follows:

H4. There is a relationship between cash holdings and asset liquidity for Shariah-compliant firms.

2.5.5 Firm size.

It is observed that small firms hold more cash than large firms since there are high costs associated with external funding. Moreover, as large firms tend to be more diverse than small ones and less likely to incur bankruptcy-related costs (Al-Najjar and Belghitar, 2011; Bugshan et al., 2021), they are also less likely to stockpile cash reserves. Larger firms are less likely to suffer from information asymmetry; hence, their managers are more flexible regarding financial policies, thus tending to hold more cash. Ozkan and Ozkan (2004) also state that, if the firm size can be considered a proxy for information asymmetry (thus indicating external financing costs), then there is a higher possibility of it having a negative relationship with cash holdings. However, if the firm size is regarded as an index for financial distress, then there is a higher possibility of small firms being liquidated in case of financial hardship. Therefore, these firms hold more cash to avoid potential crises (Ozkan and Ozkan, 2004). Findings in emerging markets are mixed: Al-Najjar (2013) and indicate a negative relationship between a firm's size and its cash holdings; however, Guizani (2017) suggests that this relationship is positive. Hence, the

present study argues that firm size is crucial when determining cash holdings, even though it does not indicate a direction for the correlation between cash holdings and firm size. Thus, the following hypothesis can be provided:

H5. There is a relationship between cash holdings and firm size for Shariah-compliant firms.

2.5.6 Dividend payments.

The trade-off theory states that cash holdings should be negatively associated with dividend payments as dividend-paying firms can trade off the costs of holding cash by decreasing their dividend payments. That is, there is a greater possibility of firms distributing dividends among their shareholders to raise funds at a reduced cost by suddenly decreasing their dividend payments in case of a necessity (Al-Najjar and Belghitar, 2011). Moreover, Ozkan and Ozkan (2004) state that firms with low internal financing resources can avoid such costs by issuing equity or reducing their dividend payments. This was confirmed by Opler et al. (1999), who states that, if a firm has insufficient liquid assets, it can reduce its dividends or investments or increase its external funds using asset sales or security issuances, thus dealing with a shortage. Hence, following the previous empirical findings as well as the trade-off theory, the following hypothesis has been proposed:

H6. Cash holdings have a negative relationship with dividends among Shariah compliant firms.

2.5.7 Growth opportunities.

According to the trade-off theory, cash holdings have a positive relationship with growth opportunities. The opportunity cost resulting from insufficient liquidity should be higher for firms that have high-quality investment projects. Moreover, these firms have higher financial distress costs which makes external financing more costly. To avoid such costs, firms that have high-quality investment projects are likely to offer liquidity to reduce the risk of future underinvestment. Hence, avoiding cash shortfall adheres to the cash transaction motive (Opler et al., 1999). The second motive behind avoiding financial distress is the precaution motive (Bates et al., 2009; Lozano and Yaman, 2020). Further, according to the pecking order theory, cash holdings have a positive relationship with growth opportunities. The relationship between growth opportunities and cash holdings may vary in Shariah-compliant depending on the availability of profitable projects. However, when firms have high growth opportunities, they will hold more cash to address any cash shortfalls. This leads to the following hypothesis:

H7. There is a relationship between cash holdings and growth opportunities for Shariah-compliant firms.

3- Methodology

the results and findings of the prior researches have been taken into account. This study like the earlier researches is going to add knowledge to the body of research specifically by determining the factors influencing cash holdings in Shariah compliant firms of GCC countries in the period of 2015–2022.

3.1 Data

The sample of the study consists of annual data for non-financial listed firms in GCC countries in the period of 2015–2022. The sample of GCC countries was chosen because these countries share common characteristics with similarities in language, religion and economic structure. The study does not cover the period before 2015 because a substantial portion of the data for this period is missing or unavailable. Annual data for all firms are obtained from the data stream database. The Ideal Ratings database was used to identify Shariah-compliant firms in the GCC. Following previous research on cash holdings, to reduce the impact of outliers on results, all variables are minorized at the 1st and 99th percentiles (Bates et al., 2009; Chen et al., 2014). Accordingly, the final data sample used in this study covers 75 firms categorized into different industries. energy (9 firms), consumer discretionary (10 firms), information technology (6 firms), industry (11 firms), material (8 firms), healthcare (7 firms), real estate (12 firms), telecommunications (5 firms) and utilities (7 firms).

3.2 Variable measurement and model specification

The cash asset ratio (CashTA) is used as the main proxy of cash holdings, relying on the net cash ratio (CashNet) as an alternative measure. As mentioned already, all independent variables are applied following the study of Opler et al. (1999). The variables were used in this study, how each variable is measured, and the expected corresponding theory for each of the independent variables for are all shown in table no.1

Table 1 variables description

Variable Type	Variable name	Variable Abbreviation	Measurement	Corresponding Theory
Dependent Variable	Cash holdings	CashTA	The ratio of total cash and equivalents divided by (total	-----

			assets–total cash and equivalents)	
Independent variables	Firm size	SIZE	Natural logarithm of total assets	Trade-off Pecking order
Independent variables	Leverage	LEVER	Total liabilities to total Assets	Trade-off Pecking order
Independent variables	Dividend Payments	DIVID	Dummy variable that takes the value of 1 if a firm pays a dividend and 0 in any other case	Trade-off Pecking order
Independent variables	Profitability	PROF	Net income divided by total assets	Trade-off Pecking order
Independent variables	Growth opportunities	Q	The market value of equity plus the book value of debt divided by the book value of total assets	Trade-off Pecking order
Independent variables	Capital Expenditure	CAPEX	Capital expenditure scaled by total assets	Trade-off Pecking order
Independent variables	Net working capital	NWC	The ratio of current assets minus current liabilities divided by net total assets	Trade-off Pecking order

To investigate the determinants of cash holdings, this study applies the following equations represent the regression models:

$$\text{CashTA}_{i,t} = \beta_0 + \beta_1 \text{Size}_{i,t} + \beta_2 \text{Lever}_{i,t} + \beta_3 \text{Divid}_{i,t} + \beta_4 \text{NWC}_{i,t} + \beta_5 \text{Prof}_{i,t} + \beta_6 \text{Capex}_{i,t} + \beta_7 \text{O}_{i,t} + \epsilon_{i,t}$$

Where:

$\text{CashTA}_{i,t}$ is the ratio of cash and equivalents to total assets in year t ;

$\text{Size}_{i,t}$ is the size of the firm measured as the natural logarithm of total assets in year t ;

$\text{LEVER}_{i,t}$ is the ratio of total liabilities to total assets in year t ;

$\text{DIVID}_{i,t}$ is a dummy variable: 1 if a firm pays a dividend in t and zero otherwise;

$Q_{i,t}$ is Tobin's Q , calculated as the market value of equity plus the book value of debt

divided by the book value of total assets;

$\text{PROF}_{i,t}$ is net income before interest and tax divided by total assets in year t ;

$\text{CAPEX}_{i,t}$ is the ratio of capital expenditure to total assets in year t ;

$NWC_{i;t}$ is the net working capital: current assets minus current liabilities divided by net

total assets in year t ;

$\epsilon_{i;t}$ is an error term.

3-3 Liner Regression Result

3-3-1 Descriptive Statistics:

In order to know the descriptive properties of the collected data, this technique has been applied. Results are shown in the Table 2:

Table 2 Descriptive Statistics

VARIABLES	MEAN	STD DEV	MIN	MAX
CASH	0.042	0.079	0.002	0.453
NWC	0.140	0.013	0.019	0.970
CAPEX	0.348	0.330	-1.420	0.697
LEV	0.331	0.245	0.800	1.080
Q	1.07	0.750	0.154	5.530
SIZE	14.66	1.670	10.41	18.660
DIV	0.353	0.321	0	1
PROF	0.364	0.481	0	1.177

Table 2 provides summary statistics for the dependent and the independent variables used in this study: the cash holding proxies and other independent variables for the whole sample of Shariah-compliant firms. The higher mean (median) of cash holding determinants for the Shariah-compliant is 14.66 meant for variable of firm size. Similarly, the lower means (median) of cash holding determinants for the Shariah-compliant is 0.140 meant for variable of net working capital. However, the higher standard deviation of cash holding determinants for the Shariah-compliant is 1.67 meant for variable of firm size. Similarly, the lower standard deviation of cash holding determinants for the Shariah-compliant is 0.013 meant for variable of net working capital. Though, the higher min of cash holding determinants for the Shariah-compliant is 10.41 meant for variable of firm size. the lower min of cash holding determinants for the Shariah-compliant is -1.420 meant for variable of capital expenditure. Finally, the higher max of cash holding determinants for the Shariah-compliant is 18.66 meant for variable of firm size. the lower max of cash holding determinants for the Shariah-compliant is 0.697 meant for variable capital expenditure.

To examine the relationship between the studied variables with multicollinearity among them, Pearson Correlation technique has been applied. The correlation results are shown below in table no 3.

Table 3 Pearson Correlation matrix

Variables								
CASH	1							
NWC	0.26	1						
CAPEX	0.22	-0.05	1					
LEV	-0.28	-0.04	-0.39	1				
Q	0.29	0.35	-0.07	-0.02	1			
SIZE	0.09	-0.13	0.21	-0.09	-0.01	1		
DIV	0.34	0.34	0.34	-0.31	0.35	0.23	1	
PROF	0.30	0.11	0.22	-0.52	0.09	0.07	0.24	1

Table 3 shows the pairwise correlation matrix for the main variables used in multiple liner regressions. The table shows no high correlation between the independent variables, which implies that we do not have any multicollinearity problems that could have been detrimental to the results of the liner regressions. According to the Correlation results, negative and significant relationship exists between Leverage and Cash holdings. Whereas positive and significant relationship exists between Net working capital, Capital expenditure, Dividend, Profitability and Cash holdings, Weakest correlation exist between Size and Cash holdings and strongest correlation exists between Dividend and Cash holdings.

3-3-2 Multiple Regression Analysis

The impact of independent variables on dependent variables is studied through the multiple liner regression technique the result is shown in table no. 4.

Table no. 4: Results of Multiple Regression Analysis

Variables	Coef	Std. Err	T-Value	P-Value
NWC	0.593	0.0211	2.80	0.005
CAPEX	0.031	0.0076	3.98	0.000
LEV	-0.311	0.0111	-2.79	0.005
Q	0.022	0.00327	6.75	0.000
SIZE	0.003	0.0014	2.58	0.010
DIV	0.210	0.087	2.42	0.016
PROF	0.294	0.0053	5.46	0.000

According to the above results, all the variables with P-value equal to or greater than 0.05 would be insignificant predictors of Cash holdings. On the basis of this Net working capital, is insignificant whereas Size, Dividend payments, Liquidity, leverage, growth opportunities and profitability are strong and significant predictors of Cash holdings in Shariah-compliant firms.

As per above analysis growth opportunities have a negative significant impact on the cash holdings which is similar to the views that firms with high growth opportunities invest their major portion of cash in marketable securities or cash equivalents because these firms have to face higher costs of external financing in financial distress. The findings are consistent with Ozkan (2004) and the hypothesis is accepted. Net working capital also has a significant impact on cash holdings consistent with the large amount of net working capital have lower amount of cash reserve.

Capital expenditure has negative significant impact on cash holdings consistent with the large amount of capital expenditure decreases cash reverse. Leverage has a high negative significant impact which is consistent with the findings that firms that invest in debt or have higher debt ratios have lower holdings of cash. Size has an insignificant relationship with cash holdings due to the fact that the firms with large size have good access to financial and capital markets. So, they do not need to high cash holdings every time. Dividend payments also have a positive significant relationship with cash holdings because firms that payout dividends to shareholders regularly need to have higher cash holdings. profitability also has a very strong significant impact on cash holdings. So, firms tend to hold more cash because of the precautionary needs to sudden financial slow down and economic crisis. Out of the seven hypotheses only one are rejected which are related to net working capital. Remaining all are related to size, Dividend, profitability, leverage, capital expenditure and growth opportunities are accepted with significant results.

4- Results

4.1 Descriptive statistics

Table 2 provides summary statistics for the dependent and the independent variables used in this study. the cash holding proxies and other independent variables for the whole sample. On average, the Shariah-compliant firms use 33% debt financing in their capital structures the low leverage for the Shariah compliant firms can be explained by the constraints on debt financing imposed by Shariah law. Similarly, capital expenditure for the Shariah-compliant firms is slightly low which may be due to the limited access of compliant firms to external financing channels. In this respect, Shariah-compliant firms are typically, more conservative than other compliant counterparts. Finally, the Shariah-compliant firms growth opportunities reflect investing in these markets have a similar perception about the prospects of both firms with a slight preference towards Shariah-compliant firms.

Table 4 reports that Leverage is negatively related to cash holding decisions for the Shariah-compliant firms. This implies that higher leverage would result in lower cash holdings. Consistent with the pecking order theory, there is a simultaneous occurrence between the firms' high leverage levels and increased cash holdings (Ferreira and Vilela, 2004). Further, the negative relationship between leverage and cash holdings for Shariah-compliant firms is in line with the transaction cost motive of the trade-off theory. This finding is also consistent with the existing studies (e.g. Al-Najjar, 2013; Al-Najjar and Belghitar, 2011; Bhuiyan and Hooks, 2019; Bugshan et al., 2021; Guizani, 2017).

Interestingly, profitability shows a significant and positive relation with cash holdings for the Shariah-compliant firms. Following the pecking order theory, the positive effect of profitability on Shariah-compliant firms reveals that they rely heavily on internal funds as a source of liquidity since they have fewer external financing options due to the Shariah restrictions (Alnori and Alqahtani, 2019; Bugshan et al., 2021). In general, the results for the Shariah-compliant firms are consistent with the previous research (e.g. Al-Najjar and Belghitar, 2011; Chen et al., 2021; Dittmar et al., 2003; Ferreira and Vilela, 2004; Yang et al., 2017). For the Shariah-compliant firms, the significant impact of profit on cash holdings is in line with (Lozano and Yaman, 2020; Opler et al., 1999; Ozkan and Ozkan, 2004) studies. The results show that capital expenditure is found to be highly significant and negatively related to the cash holdings of just the Shariah-compliant firms, indicating that larger investments reduce cash reserves. This negative relationship between investments and Shariah-compliant firm cash holdings is consistent with the pecking order theory but contrasts the trade-off theory. This variation can be explained by the fact that Shariah-compliant firms heavily rely on their limited cash reserves to fund their investments. This is due to their facing more expensive external financing options because of the Shariah restrictions (Alnori and Alqahtani, 2019). The negative relationship between the investments of Shariah-compliant firms and their cash holdings is in line with the findings of several existing studies (e.g. Bugshan et al., 2021; Guizani, 2017; Marwick et al., 2020; Olper et al., 1999). Consistent with the trade-off theory and most existing studies (e.g. Al-Najjar, 2013; Al-Najjar and Belghitar, 2011; Bugshan et al., 2021; Guizani, 2017; Lozano and Yaman, 2020; Ozkan and, 2004; Marwick et al., 2020) is the finding that, for Shariah-compliant firms, net working capital is negatively related to cash holdings. This indicates that this

type of firms substitutes their levels of liquid assets to cash since converting liquid assets to cash is cheaper and helps firms avoid external financing. It can be noticed in the results that the negative relationship between net working capital and cash holdings is at a 1% significance level for the Shariah-compliant firms.

Size shows a positive and significant relationship with cash holding for firms, which is in line with the prediction of the trade-off and pecking order theories and previous studies (e.g. Bugshan et al., 2021; Lozano and Yaman, 2020; Marwick et al., 2020; Olper et al., 1999). Further, the results show that there is evidence of that dividend payouts, growth opportunities the Shariah-compliant have an effect on cash holding decisions. Theoretically, except for the net working capital, the pecking order theory is seen to be more successful than the trade-off theory in terms of predicting the relationships between most cash holding determinants and the Shariah-compliant firms' cash holding decisions. This shows that Shariah-compliant firms often rely on internal funds as their prioritized financing option since, because of Shariah regulations, they have less access to external financing, which makes it more costly for them than for conventional firms.

5-Conclusion

The current study aimed to investigate the financial determinants of cash holdings and exploring in Shariah regulations. The main motivation of this study is the lack of research on cash holding decisions of Shariah compliant firms. To analyze this, the sample consisted of annual data for non-financial listed firms in GCC countries in the period of 2015–2022 was used. The study found that the determinants of cash holdings were leverage, dividend payout, profitability, capital expenditure, capital expenditure and size. However, net working capital has no bearing on the cash holding decisions for Shariah-compliant firms. The determinants of corporate cash holdings for Shariah-compliant firms are better explained using the pecking order theory than the trade-off theory. This reveals that Shariah compliant firms use liquid assets as their first financing option since, due to the Shariah regulations, they have less access to external financing, which makes it more costly for them than for conventional firms. The finding of the study has important implications for investors, bankers and regulators. Understanding the Shariah-compliant determinants help investors to understand the motivations for liquidity decision and how it may impact on firm performance. Bankers and regulators need to work together to improve Shariah complying products, to reduce the barriers to

external financing for Shariah compliant firms and to prevent a systematic competitive disadvantage that they may experience in the marketplace.

6-recommendations

Understanding the Shariah-compliant determinants help investors to understand the motivations for liquidity decision and how it may impact on firm performance. Bankers and regulators need to work together to improve Shariah complying products, to reduce the obstacles to external financing for Shariah compliant firms and to prevent the systematic competitive disadvantages in the marketplace.

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