



RESEARCH PAPER

**Financial Drivers of Corporate Cash holdings and its Implications:
Evidence from Pakistan Stock Exchange**

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ABSTRACT

The study inspects corporate cash holding behavior of firms listed at Pakistan Stock Exchange during 2013 to 2018. More specifically, we look into the financial determinants of corporate cash holdings and its impact on firm value during 2013 to 2018. Furthermore, the study investigates which of the theories imply in Pakistani firms regarding corporate cash holding behavior. The study identifies that among financial variables profitability, liquidity, growth, dividend and age have positive significant relationship while leverage and size are showing significant negative relationship with corporate cash holdings. Our study results imply Theory of Pecking Order. Furthermore, value of the firm is being significantly affected by the corporate cash holdings.

Introduction

Academic researchers and business practitioners have given growing attention to corporate cash holdings (Lee & Park, 2015). Corporations are keeping more in terms of cash balances and this trend is rapidly increasing in recent years. This dramatic increase in cash balances has crucial implications not only for the firm's profitability and risk but also for the growth of the economy as well (Graham and Learey, 2015). Cash is formulated as cash and marketable securities companies have in their balances

(Opler, et al., 1999). The justification for holding cash goes back to Keynes (1936) who, in the General Theory of Employment, Interest and Money, suggested transaction and precautionary motives for holding these assets. Transactional needs arise from normal course of business activities as payment of taxes, wages, salaries and dividend while precautionary needs are where firms hold more cash when cash flow is not sufficient to fulfill investment needs or raising funds outside is expensive.

Keeping funds idle is not free of cost. It is critical to identify its important determinants. Firms might hold cash to fulfill contingencies of future but at the same time, they may not be able to finance in lucrative projects, with positive NPV (Al-Najjar, 2011). Similarly, shareholders can consider corporate cash holdings in any way; good or bad. From positive side, high cash holding firms have the ability to attract greater opportunities of investment and growth and operating performance indicators (Opler, et al., 1999; Mikkelson & Partch, 2003).

Nevertheless, it is also the case that those mechanisms of governance which fuel cash holding behavior are not as much of favorable to the shareholders because those mechanisms are not in line with the wealth maximization of the owners. Larger boards of directors, weak country-level laws of shareholder protection, dominance of insiders in the boards and more insider ownership concentration are those poor indicators of corporate governance which can be resulted as a consequence of holding more cash (Dittmar, Mahrt-Smith & Servaes, 2003; Ferreira and Vilela, 2004; Ozkan and Ozkan, 2004; Kusunadi, 2005; Chang and Noorbakhsh, 2006). Consequently, negative side of holding more cash is in terms of appearance of substantial agency related problems. It is not surprising that most of research in the countries with weak shareholder protection has found that due to more cash holding behavior, firm value declines (Kalcheva & Lins, 2007; Pinkowitz, Stulz, & Williamson, 2006). Managers prefer to hold more cash than do shareholders because in this way spending cash for their personal interest become easy which may not increase firm value (Jensen, 1986).

Emphasis of existing literature on corporate cash holdings has been on developed economies while this issue is prevailing in developing economies as well, like in Pakistan. Little research and inconsistency in results leads to this research. Results of our study will not only contribute to the existing literature but also will guide the managers about how to manage their cash related decisions for value maximization. The breakup of the paper is as follows: Section 2 contains the review of literature. Section 3 presents the data and methodology. Section 4 demonstrates regression results. Section 5 mentions discussion of empirical results. Finally, section 6 elaborates conclusion of the study.

Literature Review

The Trade-off Theory

According to this model, firms make cost and benefit analysis of holding cash and then decide their optimal cash level to maximize the value. This theory assumes that managers work for the wealth maximization of the shareholders. There is the

opportunity cost of holding cash which give only minimum returns. It is the difference between what firms earn through holding more cash and how much will be paid by firms for raising more cash (Dittmar, Mahrt-Smith, & Servaes, 2003) while benefits are transaction cost minimization and precautions. For transaction cost minimization, it increases the acceptance of positive NPV projects for the growth, save the firms from raising funds externally at high cost and liquidating existing assets (Dittmar et al., 2003; Miller & Orr, 1966; Tobin, 1956). Motive of precaution is based on fact that asymmetric information is having effect on raising capital and in spite of the fact that firms are capable to raise capital from capital markets but is hesitant to do so because market can underprice the issuance of securities. Ozkan and Ozkan (2004) further contend that corporations hold more cash when cost of raising it externally is high. Opler et al. (1999) assure that there exists an optimal cash level where the marginal cost becomes equal to marginal benefits. Ferreira and Vilela (2004) states that chances of financial distress decreases by increasing cash level. Imperfections of the market are more serious in developing countries as compared to developed ones and cost of financial distress is also high in these countries. So the theory can explain the behavior of cash holdings in Pakistan as well. Similar findings also explain this behavior in developing countries (Al-Najjar, 2011; Booth, Aivazian, Demirguc-Kunt, and Maksimovic, 2001).

Pecking Order Theory

Myers and Majluf (1984) explain order of financing for the companies. It is based on asymmetric information and states that raising finance involves cost as in terms of asymmetric information and to save from the cost, firms should use its retained earnings then use debt and finally avail equity as final option. The theory does not recognize target cash level and states that cash is playing a role of buffer stock for retained earnings and firms' investment needs (Dittmar et al., 2003). Myers (1984) says that firms prefer debt on equity when raising funds externally. On the basis of previous research, we contend that asymmetric information is critical specifically in countries like Pakistan (Al-Najir, 2011; Booth et al., 2001).

The determinants of cash holdings: hypotheses development

Firm size

It's costly for the small firms to raise finance from outside and they keep more cash resultantly. Large firms have diversified operations and are less confronted to cost of bankruptcy and keep less cash (Al-Najjar & Belghitar, 2011). Asymmetric information is less in large size firms as compared to small size firms. Due to the flexibility of their financial policies, large firms hold more cash. According to Ozkan and Ozkan (2004), if asymmetric information (external financing) is indicated by size, then it should be negatively related to it. However, if small firms face the risk of financial distress more, then they will keep more cash to save from that risk (Ozkan & Ozkan, 2004).

It is also assumed that mostly larger the firm is more profitable it will be. In this way large firms must keep more cash in hand once they have control it for investment (Opler *et al.*, 1999, Ferreira and Vilela, 2004; Janiet *et al.*, 2004). Theory of Pecking Order and agency theory portrays size and cash as positively related. Shareholders are dispersed in large firms and attempts of takeover will be less which gives their managers more control over the investment and financial decisions of the firms (Ferreira and Vilela, 2004). According to theoretical background, size may affect corporate cash holdings as positive or negative.

H1. There is a negative/positive connectivity of firm size with cash.

Profitability

Financing order states that cash is a result of investment and financing activities (Dittmar *et al.*, 2003). Similarly, profitability of the firms increase their debt and dividend paying ability and resultantly keep more cash in hand. Firms with less profitability will keep less amount of cash in hand and take debt instead of equity for their project financing due to high cost of equity issuance (Al-Najjar & Belghitar, 2011; Dittmar *et al.*, 2003; Ferreira & Vilela, 2004). According to Dittmar *et al.* (2003:116), firms having low cash flow keep less cash in hand and raise funds from debt rather than from equity.

H2. Profitability and cash are positively correlated to each other.

Leverage

Due to chances of financial distress, firms with leverage keep more cash in hand. Cash and debt move in opposite fashion (Baskin, 1987). Similarly, those firms having more near to cash assets can convert them into cash quickly and need not to keep much cash in hand (Al-Najjar & Belghitar, 2011; Ozkan & Ozkan, 2004). Opler *et al.* (1999), Ozkan and Ozkan (2004), and Al-Najjar and Belghitar (2011) claim that there exists negative relation between cash and leverage. Cost of bankruptcy is also important and evident in emerging economies (Al-Najjar, 2011; Booth *et al.*, 2001). According to Ferreira and Vilela (2004), highly levered firms hold less cash because financial institutions are monitoring their operations due to taking debt.

H3: There is a positive/negative link between leverage and cash holdings

Growth

According to theory of Trade-off, growth and cash are positively related to each other. Firms having growth opportunities have chances of risk of higher external fund raising cost and hold more cash (Opler *et al.*, 1999; Bates *et al.*, 2009; Ferreira and Vilela, 2004). Pecking order theory also depicts positive connectivity of growth with cash. Therefore, negative relationship exists between cash and growth according to theory of free cash flow due to agency cost. Study of Opler *et al.*, 1999 explains that managers having enough investment opportunities use cash for their self-interest.

H4: MTB ratio is positively related to cash holdings.

Liquidity

Converting near to cash assets into cash is less costly than other assets. Therefore, firms having more near to cash assets keep less cash in hand. Availability of near to cash assets will make firms depend less on capital markets for cash. According to Ferreira and Vilela (2004) (Al-Najjar&Belghitar, 2011; Ozkan&Ozkan, 2004), when firms need cash, then liquid assets can be converted easily into cash. This negative relationship is due to the implications of Trade-off theory. However, positive relationship can also exist. Firms having short cash conversion cycle need not to keep more cash in hand for precautionary purpose, actually if cash conversion cycle is short then it releases cash from working capital cycle and resultantly corporate cash holdings increase (Jani et al., 2004).

H5. There is a positive/negative association between asset liquidity and cash holdings.

Dividend

Cash is needed for paying dividends and can reduce its cost by lessening paying dividends. Furthermore, firms can decrease dividends and it will be less costly for the dividend paying firms to raise funds (Al-Najjar&Belghitar, 2011). According to Ozkan and Ozkan (2004:2106,), even this cost can be completely removed when firms have ample internal cash resources which comes either from issuance of equity or from minimizing dividend amounts. Study of Opler et al. (1999:8) also explores negative association of dividend. Firms are facing shortfall of cash, then firms can deal with this shortage by either cutting dividends, or making investments less, or through issuing securities or by selling assets. On the basis of previous literature, our hypothesis become such as following:

H6. There is a positive/negative association between dividends and cash holdings.

Firm Age

Study of Dittmar and Duchin (2010) explains that age is another financial determinant (Pinkowitz et al., 2013). Mature firms try to maintain their relationship more carefully with their stakeholders like customers, shareholders, suppliers, creditors and managers than do new firms and hold less cash (Henk, 2012). On the other hand, mature firms also need more cash to meet its uncertain needs and day to day operations. Pecking order theory also suggests positive relationship between age and cash.

H7: Firm age is positively/negatively related to cash holdings.

Firm Value

There is less number of researches which explored the influence of corporate cash holdings in determining firm value (Lehtinen, 2011). According to classical view there is negative link of the value of the firm with corporate cash holdings. As more cash holding firms will not invest in profitable projects and will pay high in terms of taxes in the end (Wenyao, 2010). Many researches argued against this classical view. Sin and Soenen (1998) says that firms holding more cash need less external funds and those firms are in better position to get profits.

Value increases for the firms which hold more cash (Frésard, 2010). The study further indicated that the share price of the firms increases with more cash in hand (Vuorikari, 2012). When size of investment opportunities is large and need more in terms of cash then it will have positive effect on the value of the firm (Opler, Pinkowitz, Stulz, and Williamson 1999).

Cash has its positive implications not only for the operational activities of the firms but also for its performance. It was a time when firms holding more cash were in pressure to return it to shareholders but in recent times, investors feel happy when they see firms holding more cash reserves. In bearish market more cash holding firms take competitive edge in this regard.

Impact of corporate cash holdings on cash has been explored mostly in developed countries. On the other hand, this phenomenon has been investigated less in the developing countries although these countries are facing same situation (Chen, 2012). Palazzo (2011) investigates non-financial firms from USA and states positive relationship between cash and firm value. This relationship is stronger in the firms having less valuable projects. Sur, Biswas and Ganguly (2001) come up with the same findings. Corporate cash holding is one of the fundamental decisions in financial management of the company (Islam, 2012). Corporate cash policy and its implications are not fully clear and need more extensive research (Frésard, 2009 and Al-Najjar, 2012). Martínez-Sola, García-Teruel, and Martínez-Solano (2013), Morellec and Schürhoff (2011), and Bates, Kahle, and Stulz (2008) explored negative relationship between corporate cash holdings and value of the firm.

H8: Firm age is positively/negatively related to cash holdings.

Material and methods

Data

In order to study financial variables of corporate cash holdings and its impact on the firm value, data has been taken from non-financial firms listed on PSX. In order to investigate corporate cash holdings, secondary data has been taken for analysis from financial statements analysis of companies listed on Pakistan Stock Exchange during 2013 to 2018 published by State Bank of Pakistan (SBP) with the title of "Balance Sheet Analysis of Joint Stock Companies" First of all, all non-financial firms

were taken as population of the study, then those lacking data of balance sheet and income statement were excluded from the sample set. Finally, the dataset obtained is balanced panel of 282 firms with 1692 observations for the period of 6 years. Data for the share prices has been taken from the website of the business recorder. Average of high and low share price has been taken for analysis.

Variables

The variables taken in the study are consistent with the previous literature. In this way, we can compare our study results with the studies conducted in developed and developing countries. For the financial determinants of corporate cash holdings and its impact on firms' value; the definitions of dependent and independent variables are reported in the table below:

Table 1
Operational Definitions of Variables

Variable		Definition
Corporate Cash Holdings	cash _{it}	Cash and Cash Equivalents / Total Assets - Cash or Cash Equivalents
Leverage	lev _{it}	Total Liabilities / Total Assets
Dividend Dummy	div _{it}	1 for company paying dividend and 0 for not paying dividend.
Firm Size	sz _{it}	Natural Logarithm of Net Assets
Growth	mbr _{it}	Average Share Price / Book value *Book Value = Total Equity / Number of Share Outstanding
Liquidity	nwc _{it}	Total Current Assets-cash and cash Equivalents-Total Current Liabilities / Net Assets
Profitability	pro _{it}	Earning Before Tax / Net Assets
Age	age _{it}	Natural Logarithm of Age
Firm Value	mcap _{it}	Natural log{(no.of shares outstanding)market share price}

All the variables of our model are consistent with the previous literature. The key objective of the study is to check whether firm specific or financial variables taken in the study affect cash holdings in Pakistan during 2013 to 2018. For this purpose; the dependent variable of the study is corporate cash holdings. Then our study examines the impact of corporate cash holdings on firm value where market capitalization is taken as dependent variables. Data used in our study is a panel data where different non-financial firms are analyzed from 2013 to 2018.

Econometric Model

In our study we use panel data estimation techniques for the analysis. Regression model for pooled, fixed and random effects are used for estimation

purpose. Pooled regression model is based on the hypothesis that among the firms no individual or group differences exist. Cross-sectional effects may arise on each firm in panel data as each firm is taken over different time periods. For this problem, models of fixed effects and random effects are used. Intercept in fixed effects vary from firm to firm as this technique consider that variation is firm specific and its slope coefficients are assumed to be constant. Assumption in random effects is that firm specific variation is not correlated with the other independent variables. Further, Hausman test is used to select between fixed and random effects which one can better explain variations in our results. The null hypothesis for Hausman test states that both the models' estimators are same at most.

Our regression models are specified as:

$$cash_{it} = a_0 + \beta_1 sz_{it} + \beta_2 pro_{it} + \beta_3 lev_{it} + \beta_4 gro_{it} + \beta_5 liq_{it} + \beta_6 div_{it} + \beta_7 age_{it} + \varepsilon_{it} \dots \text{Model}$$

$$cash_{it} = a_0 + \beta_1 sz_{it} + \beta_2 pro_{it} + \beta_3 lev_{it} + \beta_4 gro_{it} + \beta_5 liq_{it} + \beta_6 div_{it} + \beta_7 age_{it} + \mu_i \dots \dots \dots$$

$$cash_{it} = a_0 + \beta_1 sz_{it} + \beta_2 pro_{it} + \beta_3 lev_{it} + \beta_4 gro_{it} + \beta_5 liq_{it} + \beta_6 div_{it} + \beta_7 age_{it} + \varepsilon_{it} + \mu_{it} \dots \dots \dots$$

Where

cash = Corporate Cash Holdings

sz = Size of the firm

pro = Return on asset

lev = Total Leverage

gro = Market-to-book ratio

liq = Net working capital

div = Dividend Dummy

agr = Age of the firm

ε_{it} = error term for firm *i* at time *t*

ε_i = cross-sectional error component

μ_{it} = error term for firm *i* at time *t*

and where ε_{it} , $\varepsilon_i + \mu_{it}$ are the unobservable effects of the firms and time. Company specific effects vary among the companies but are fixed for a particular company over the time and do affect the corporate liquidity significantly. The time effects are fixed for all the companies in a given year but change over the time. It is also possible that

the company specific variables are not truly exogenous and estimators can be correlated to the previous and current values of random error μ_t .

$$mcap_{it} = a_0 + \beta_1 cash_{it} + \beta_2 sz_{it} + \beta_3 pro_{it} + \beta_4 lev_{it} + \beta_5 gro_{it} + \beta_6 liq_{it} + \beta_7 div_{it} + \beta_8 age_{it} + \varepsilon_{it} \dots \dots \dots \text{Model}$$

$$mcap_{it} = a_0 + \beta_1 cash_{it} + \beta_2 sz_{it} + \beta_3 pro_{it} + \beta_4 lev_{it} + \beta_5 gro_{it} + \beta_6 liq_{it} + \beta_7 div_{it} + \beta_8 age_{it} + \mu_i$$

$$mcap_{it} = a_0 + \beta_1 cash_{it} + \beta_2 sz_{it} + \beta_3 pro_{it} + \beta_4 lev_{it} + \beta_5 gro_{it} + \beta_6 liq_{it} + \beta_7 div_{it} + \beta_8 age_{it} + \varepsilon_{it} + \mu_{it}$$

Where

mcap = Market Capitalization

cash = Corporate Cash Holdings

sz = Size of the firm

pro = Profitability

lev = Total Leverage

gro = market-to-book ratio

div = Dividend Dummy

liq = Net working capital

age = Age of the firm

ε_{it} = error term for firm i at time t

ε_i = cross-sectional error component

μ_{it} = error term for firm i at time t

Results and Discussion

Descriptive Statistics and Correlation Matrix

Summary stats of all variables are indicated in Table I. Main variable of the study is cash. Mean value of cash is 4.52 percent. It indicates that non-financial firms in Pakistan hold 4.52 percent cash out of net assets which is close to the values stated by Dittmar, Mahrt-Smith, and Servaes (2003) for Pakistani firms (5.3%) where the difference may arise due to variation in sample sizes and time duration.

Table 4.1 indicates result of correlation for all the variables. Results analyses the existence of linear relationship between all the independent variables. Results show that there is no multicollinearity among the independent variables. There exists no problem of multicollinearity. All the values are less than 0.60 which shows no multicollinearity.

Table 2
Correlation Matrix

Variable	N	Mean	SD	MIN	MAX
CASH _{it}	1692	0.0452	0.0889	0.0001	0.7242
MCAP _{it}	1692	16.8956	2.0940	12.2946	23.0720
SZ _{it}	1692	15.4010	1.6200	10.8767	20.3119
PRO _{it}	1692	0.0618	0.1505	-2.3756	1.0382
LEV _{it}	1692	0.5772	0.2895	0.0696	2.7752
GRO _{it}	1692	17.6008	28.5786	-49.9647	337.3867
LIQ _{it}	1692	1.3789	1.1019	0.0062	14.2336
DIVD _{it}	1692	0.5638	0.4960	0	1
AGE _{it}	1692	1.4103	0.2690	0.3010	1.8388

Table 3
Pearson Correlation

Variable	CASH _{it}	MCA _{it}	SZ _{it}	PRO _{it}	LEV _{it}	GRO _{it}	LIQ _{it}	DIVD _{it}	AGE _{it}
CASH _{it}	1.000								
MCAP _{it}	0.2562	1.000							
SZ _{it}	0.0623	0.8302	1.000						
PRO _{it}	0.3277	0.4462	0.2171	1.000					
LEV _{it}	-0.0576	-0.2126	-0.0807	-0.3886	1.000				
GRO _{it}	0.1455	0.4127	0.1139	0.2612	-0.0327	1.00			
LIQ _{it}	0.1169	0.1488	-0.0256	0.2856	-0.5514	0.0312	1.000		
DIVD _{it}	0.2364	0.4991	0.3420	0.4754	-0.3355	0.1592	0.3230	1.000	
AGE _{it}	-0.0608	-0.0487	-0.0405	-0.0495	-0.0365	0.0175	0.0193	0.0692	1.000

Panel data estimation techniques have been used for data analysis and indicates the results of Pooled OLS estimation, fixed effects and random effects. Under pooled OLS estimation, profitability, leverage, growth, liquidity, dividend, and age are indicating significant relationship with cash. R² of the model is 13.4 percent which shows that independent variables taken in study are explaining up to 13.4 percent variation in cash and overall model is significant indicated by F-statistics. Results of fixed and random effect models indicate that size, profitability, leverage, liquidity, dividend and age are significant for both the models. To choose between the models (fixed effect and random effect) Hausman test is used for best estimation results. Value of Hausman test is 109.63 which is significant with zero probability. It indicates that our null hypothesis is rejected and fixed effect model results are better than random effect model. Results of the study indicate that overall profitability is significant determinant of corporate cash holdings. Size is having negative insignificant relationship with cash in pooled OLS method while it is showing significant positive relationship with cash in fixed and random effects method. Profitability, leverage, liquidity and dividend are found to be statistically significant in all the models.

Overall, study indicates significant impact of most of financial variables on corporate cash holdings.

Table 4
Dependent Variable: Corporate Cash Holding (*cash_{it}*)

Variables	Pooled OLS		Fixed Effects		Random Effects	
	Coefficient	t-Statistics	Coefficient	t-Statistics	Coefficient	z-Statistics
C	0.0498	2.00	0.4417	5.63	0.0852	2.10
SZ _{it}	-0.0023	-1.72	-0.0346	-6.35***	-0.0047	-2.05***
PRO _{it}	0.1710***	10.43	0.0832	6.20***	0.1005	7.64***
LEV _{it}	-0.0396***	-4.52	-0.0631	-5.00***	-0.0518	-4.91***
GRO _{it}	0.0001***	2.41	-0.0001	-1.55	3.90e-06	0.05
LIQ _{it}	0.0235***	4.69	0.0073	2.90***	0.0076	3.31***
DIV _{it}	-0.0180***	-2.39	0.0090	2.00***	0.0142	3.28***
AGE _{it}	-0.0180***	-2.39	0.0586	2.06***	-0.0157	-1.19
R ²	0.1346		0.0715		0.1031	
Adj R ²	0.1310					
F-Statistics	37.43		15.45		103.88	
Prob>F	0.000		0.000		0.000	
Hausman Test (χ^2)			109.63			
Prob. (χ^2)			0.000			

(t-statistic given in parenthesis)

***Significant at 10% level.

Table 4 indicates the results of Pooled OLS estimation, fixed effects and random effects where market capitalization is dependent variable. Under pooled OLS estimation, cash, size, profitability, liquidity and dividend are indicating significant relationship with market capitalization which is used as proxy for value of the firm. R² of the model is 79 percent which shows that independent variables taken in study are explaining up to 79 percent variation in cash and overall model is significant indicated by F-statistics. Results of fixed and random effect models indicated that all the independent variables are significant for both the models. To choose between the models (fixed effect and random effect) Hausman test is used for best estimation results. Value of Hausman test is 479.35 which is significant with zero probability. It indicates that our null hypothesis is rejected and fixed effect model results are better than random effect model as probability is less than 0.05.

Corporate Cash Holdings and Value of the Firm

Table 4
Dependent Variable: Market Capitalization (*mcap_{it}*)

Variables	Pooled OLS		Fixed Effects		Random Effects	
	Coefficient	t-Statistics	Coefficient	t-Statistics	Coefficient	z-Statistics
C	1.4374	5.02	3.5619	5.20	0.0852	2.10
CASH _{it}	2.7946***	10.02	0.8051***	3.50	-0.0047***	-2.05
SZ _{it}	0.9674***	62.53	0.7050***	14.77	0.1005***	7.64
PRO _{it}	2.3625***	12.44	0.4498***	3.84	0.0518***	4.91

LEV _{it}	-0.0403	-0.40	-0.3638***	-3.34	-3.90e-06***	-0.05
LIQ _{it}	0.1265***	4.89	0.0395***	1.81	0.0076***	3.31
DIVD _{it}	0.4719***	8.14	0.1914***	4.91	0.0142***	3.28
AGE _{it}	-0.0928	-1.07	1.7428***	7.09	-0.0157***	-1.19
R ²	0.7950				0.1031	
Adj R ²	0.7941					
F-Statistics	932.92		77.67		1771.64	
Prob>F	0.000		0.000		0.000	
Hausman Test (x ²)	479.35					
Prob. (x ²)	0.000					

(t-statistic for pooled and fixed effects model and z-statistic for random effects model given in parenthesis)

***Significant at 10% level.

Discussion

Results of table 3 indicate positive link of profitability and cash. This result confirms the implications of pecking order theory and trade-off theory. According to Dittmar et al, 2003, firmsearning profits are capable of paying more in terms of dividend and are able to pay their debt as well. Firms having less profits will hold less cash and will use debt over equity for the financing of their projects because equity is costly (Al-Najjar&Belghitar, 2011; Dittmar et al., 2003; Ferreira &Vilela, 2004). This is the reason that profitable firms hold more cash.

We report significant negative association of size with corporate cash holdings in fixed effect model and negative insignificant in pooled ols estimation. . According to Al-Najjar & Belghitar (2011), small firms hold more in terms of cash as it is difficult to get funds from outside. Results of size are according to the theory of trade-off. In Brazilian firms, size indicates insignificant relationship (Al-Najjar&Belghitar, 2011).

We report negative and significant relationship between leverage and cash holdings as indicated in the study of Opler et al. (1999), Ozkan and Ozkan (2004), Al-Najjar and Belghitar (2011) and Mun and Jang (2015). Here leverage is considered as an alternate of cash. Firms in Pakistan have easy access to debt need to hold less in terms of cash for the investment purpose. The results imply pecking order theory in Pakistan. The study implies that firms which are profitable and have sufficient cash available need to borrow less as compared to less profitable firms with less cash resources.

Growth is having positive significant association with cash in pooled ols estimation and it is supported by the study of Opler, et al., 1999 and Ferreira and Vilela (2004). It indicates that firms having growth opportunities hold more in terms of cash. It implies pecking order theory and trade off theory. Growth is having negative in significant relationship with cash holdings in fixed effects model.

Liquidity in terms of net working capital is showing negative significant relation with the cash holdings. It implies trade-off theory. It suggests that liquid assets are used as cash alternates.

Dividends are positively related to cash holdings. It shows opposite behavior to trade-off theory. It can be concluded that firms paying dividends find it costly to get funds from outside like from banks and keep more cash in hand to meet uncertain needs and for the betterment of the financial health (Al-Najjar & Belghitar, 2011).

Significant negative relation exists between age and cash holdings in pooled ols method. It indicates that larger the firm is, lesser the firm holds cash. It is according to the trade-off theory. Firms with more investment opportunities hold less in terms of cash. It means maturity of the firms teach them how to manage cash (Al-Amri et al., 2015). According to Faulkender (2002), it also indicates that due to asymmetric information firms with less age find it difficult to raise financing from outside and hold more cash resultantly. There exists significant positive relation between age and cash in fixed effects method. It implies that mature firms also find it costly to get funds from outside like banks and have to keep more in terms of cash.

Profitability, leverage, growth and liquidity and age are the main financial determinants in our study sample.

Results of table 4 indicate that cash is having positive and significant relationship with firm value as indicated by Martínez-Sola, García-Teruel, and Martínez-Solano (2013), Morellec and Schürhoff (2011), and Bates, Kahle, and Stulz (2008). It is indicated that Results also indicate that value of the non-financial firms is being affected by corporate cash holdings. It shows that value of the firm increases in those firms which hold more in terms of cash. Our study results are in agreement with the results of Martínez-Sola et al. (2013) and Abushammala and Sulaiman (2014).

Firstly, Motive of transaction cost support the cash holding behavior of the firms due to cost of converting assets into cash (Keynes, 1963). Due to the shortage of internal funds, not only firms will have to opt for external financing but will have to reduce dividend payments and investment opportunities. And these are costly activities. According to Opler et al (1999), cost of raising funds externally is higher than holding cash. In this way cash serves as a buffer stock when cash is needed for investment purpose. Moreover, due to the presence of asymmetric information between outsiders and firm, its firms' preference to use internally generated funds than do external funds. When the presence of asymmetric information increases, firms tend to keep more cash in hand. Therefore, more cash reserves save firms from transaction cost.

Second reason for holding cash is precautionary motive. Firms facing financial constraints retain more cash in hand (Almeida et al, 2004). Study of Lins et al. (2010) explored cash holding behavior of firms in 29 countries and indicate that future uncertainty and risk of not paying financial obligations are the key factors in

the way of firms holding more cash. According to Bates et al. (2009) and Duchin (2010), firms hold more cash due to uncertainty of their cash flows.

Profitability, size, leverage, growth, dividend and age are taken as control variables. Our study results support trade-off theory. Value of the firm will be increased with more cash holdings. Holding more cash increase the probability of accepting positive NPV projects and in this way performance of the firms will improve.

Conclusion

Many studies have been conducted on developed economies and there is no much research conducted in countries like Pakistan. Our study not only contributes to the existing literature with the latest trends of cash but also guide the managers about how to manage their cash related decisions for value maximization.

This study shed light not only on the financial determinants but also on the firm value of all non-financial firms listed at Pakistan Stock Exchange. A balanced panel of 282 firms with 1962 observations is taken as the study sample. It is found that profitability, growth, liquidity, dividend and age are having positive significant relation with cash while leverage, size and age have negative relationship with cash. In our study, market capitalization has been taken as firm value indicator and has been found to have statistically significant relation with cash. It indicates that value of the Pakistani firms increase by increasing corporate cash holdings. Our study implies Pecking order theory in the context of Pakistan.

There are some limitations of the study as well. It has not taken other financial determinants which have been taken in the studies of past. Our study has also ignored the influence of economic indicators on behavior of the firms for holding cash.

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