Impact of Corporate Governance on Corporate Cash Holdings:
An empirical study of firms in manufacturing industry of Pakistan

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ABSTRACT: Basing on agency theory this empirical study explores the effect of corporate governance on managerial cash holding decisions. For the sake of a testable propositions concerning the determinants of corporate cash holdings, different theories of corporate cash holdings are reviewed (pecking order theory, trade off theory and free cash flow theory).The investigation is performed using panel data procedure for a sample of 138 firms listed on Karachi Stock Exchange during 2008-12.The results suggest that cash flow is the only variable which is statistically significant and positively related to cash holdings. Alternatively, liquidity, leverage, bank borrowing variability of cash flow is significantly and negatively related to cash holdings. Dividend, market-to-book ratio and ratio of non-executive to total directors are positively whereas firm size family dummy and CEO duality are negatively related to cash holdings but the relationships are insignificant. In particular managerial ownership (MAN) and MAN^3 is negative but significant however MAN^2 is positively related to cash holdings. These variations in sings indicate the non-linear relationship between managerial ownership and cash holdings. To author knowledge this is first study that explores corporate governance as an important determinant of cash holding.

KEYWORDS: Corporate governance, Cash holdings, Pakistan, Manufacturing firm.

1   INTRODUCTION

One saying is: *"revenue is vanity, cash flow is sanity, but cash is king "*. Cash is king because any businesses can survive in the short- to medium-term even if they are making loss but with sufficient amount of cash .So firms prefer to hold significant amount of cash but a question leading to an unsolvable mystery is why firms hold large amount of cash and what are the factors which effect managers cash holding decisions. Finance Literature defines cash holding as sum of cash and cash equivalents (Opler, Pinkowitz, Stulz, &Williamson, 1999) (Ferreira & Vilela, 2004)(Ozkan & Ozkan, 2004) (Bates, Kahle & Stulz, 2009). Advantages of cash holing are ,firms with sufficient cash can reduce transaction cost , loss of underinvestment and it will make firm able to stabilize its cash flow volatility (Chen & Chung , 2009).And disadvantage of cash holding is its cost that includes opportunity cost of interest forgone ,loss of cash discounts on purchases and loss of business opportunities (Adetifa, 2005):

The persuasion of corporate governance elucidates synergic relationships between stakeholders and management which is framed to improve organizational efficiency and market competitiveness (Gompers et al., 2003). Because of momentous epochs of cash in corporate finance literature and its importance in working capital management, various slants are being used to explain the factors that can affect cash holding decisions. The distinction of this study from prior Pakistani investigations is to provide a detailed review of the theoretical and empirical literature on determinants of corporate cash holdings with special focus on managerial ownership, board structure and family controller among other firm characteristics like cash flow, liquidity, leverage, firm size, dividend, bank debt, market book (proxy of growth opportunities) and variability on sample of Pakistani manufacturing firms. Corporate governance is a credential contrivance for controlling the agency problem. The reason for special focus on managerial ownership lies in agency problems which may be different for bondholders, shareholders, and minority shareholders. According to the agency literature, a higher level of cash holdings provides managers with greater discretion. Papaioannou *et al.* (1992) suggests that managers hold more cash as immunity,

and Myers and Rajan (1998) argue that managers can obtain more private benefits from liquid assets. Opler *et al.* (1999) also document that entrenched managers prefer to hold cash than to pay dividend. So owners want to limit Managerial cash discretion (Jensen, 1986 and Stulz, 1990). The corporate governance mechanism being an important determinant of corporate liquidity provides stakeholders with opportunity to tether managerial cash discretion (Zangina ,2009).Good governance maximizes the stake holder's wealth and dictates a reasonable amount of cash, while weaker governance results a higher conflict of interest (Harford et al. ,2008)

The rest of the paper is structure as follows, In section 2 most prominent theoretical and empirical findings are surveyed, In section 3 the potential determinants of Corporate cash holding are summarized with concerning empirical evidence. Section 4 is empirical part of the paper which describes the data and methodology employed in the study .In Section 5 results are discussed section 6 is about conclusion

2   REVIEW OF CASH HOLDING THEORIES

To explain the determinants of cash holding many prior studies like the study of Kim, Maurer, & Sherman (1998), Opler et al. (1999), Ferreira & Vilele (2004). Ozkan & Ozkan (2004) have used three theoretical models: the trade-off theory (Myers, 1977), the pecking order theory (Myers and Malijuf, 1984), and cash flow theory (Jensen, 1986). When cash holding is explained by the trade-off model means that there is an optimal level of cash holding which can be attained by balancing the marginal cost and marginal benefits associated with cash holding (Myers, 1977) .Marginal benefits of cash holding are : with cash holding firms can avoid financial distress, it act as tool to formulate a optimal investment policy and firms with large cash holdings can reduce increasing financial cost which is increasing because of external fund raising or by liquidating existing assets. The marginal cost of cash holding is basically the opportunity cost associated with cash holding i.e. return of current short term investments which u r foregoing for transactional or precautionary motives (Opler et al. ,1999). Opler et al. (1999) named it transactional model because it explains transactional motives of cash holding.

In pecking order theory which also known as financial hierarchy theory cash is seen as a buffer between retained earnings and investment needs and there is no optimal cash level (Myers and Malijuf, 1984). Pecking order theory consider asymmetric information a central issue of financing decision which need to be address .The first and foremost reason for this central importance is that information asymmetry information makes external fund raising costly and difficult so firms prefer retained earnings than external financing. Secondly when firms becomes bank corrupt then bankers have more rights or on top of the list to get their money back so here again problem of asymmetric information arises because here both parties do not have same level of information .So the purpose of Pecking order theory is to minimize asymmetric effect cost and other financial cost, (Ferreira & vilela, 2004). According to Opler et al. (1999) this theory is opposite to trade off model because it predicts no optimal level of cash holding rather support high level of cash holdings. In pecking order theory cash is at second to meet financing need because firms use cash when retained earnings are not sufficient to finance new investment and after cash it comes debt

Free cash flow theory of Jensen, (1986) advocates large amount of cash he argument that with large cash holding firm can raise its asset and increase the power of investment decision. According to Jensen (1986) free cash flow is leftover cash after financing all projects and meeting all operational needs. By having a sufficient amount of cash for investment it will be easy for firm to pursue without disclosing project information to bankers ,it will also make firm able to make better investment decisions, (Ferreira & vilela, 2004)

To investigate a desire level of cash balance, Nadiri (1969) made first investigation on cash holdings by collecting data from US manufacturing sector from 1948 to 1964. The results showed that the demand for real cash balances is determined by output, the interest rate, the expected rate of change in general price level, and factor prices. Campbell and Brendsel (1977), conducted an empirical study by collecting data from US manufacturing firms from 1953-1963 using Ordinary Least Square (OLS) regression analysis to examine the impact of compensating balance requirements on the cash holdings. and found that compensating balance requirements are not binding. And then Opler et al (1999) with sample of 1048 US publically traded non-financial firms from 1971 to 1993 using cross section and time series test explore that firms with high volatility in cash flows and better growth opportunities hold more cash, he also found that well performing firms hold more cash.

Ozkan & Ozkan (2004) with sample of 1029 publically traded UK firms from 1984-1999 investigated empirical determinants of cash holding and find ownership structure a important determinant of cash holding, he also explored a non-monotonic relation between managerial ownership and cash holding .In his analysis cash flows and firm growth opportunities were in positive relation while leverage , liquidity and bank was in negative relation with level of cash holding .Later Ferreira

and Vilela (2004) with sample of 400 EMU firms from 1987-2000 found that cash flow, bank debt liquidity are in negative while investment opportunity is in positive relation with cash in addition they also investigated that capital development is in negative relation with cash holding and investor protected economies is in positive relation with cash holding.

Nguyen (2005) with the sample of 9168 firm year observations from Tokyo stock Exchange for the period of 1992-2003, and he explored that precautionary motives of cash holding can be used to alleviate operating earnings volatility .He investigate that cash holding is in negative relation with firm size and debt ratio and has positive relation with profitability, growth opportunity and dividend payout. Saddour (2006) investigated determinants of cash holding for sample of 297 French firms from 1998-2002.Basing his research on trade-off and pecking theory he investigated that leverage is in negative relation with cash holding while growing firm with riskier activities hold more cash .He also investigated that firm size investment opportunities and dividend payout is in direct relation with cash holding.

Afza and Adnan (2007) with the sample of 203 non-financial KSE listed Pakistani firms over the period of 1998-2005 with the data of firm size , growth opportunities ,cash flow , networking capital , leverage ,cash flow uncertainty, and dividend payments .the found negative relationship between market-to-book ratio and cash holding and firm size cash flow, variability of cash flow networking capital and leverage also has some impact on cash holdings. Now recently Shah (2011) with the sample of 280 non-financial KSE listed Pakistani firms over the period of 1996 to 2008 he with static panel data model observed that growing ,dividend paying and large firms with more cash inflows hold more cash and firms of quick conversion cycle and longer debt maturity hold less cash. Rizwan and Javed (2011) with sample of 300non-financial KSE listed Pakistani firms investigated that cash holding has positive relation with market book ratio and has negative relation with leverage and networking capital.

Drobetz and Gruninger (2007) with the sample of 156 non-financial Swiss firms investigated the determinants of cash holding between 1995-2004.he found that level of tangible asset and firm size are in negative relation with corporate cash holding and dividend payments and operating cash flows have positive relation with cash flows .they also investigated a positive but significant relation between CEO duality and Corporate cash holding and negative but insignificant relation with board size and corporate cash holdings

Hardin III et al. (2009) used a sample of 194 USA real estate firms over 1998-2006 .He with ordinary least square methods found that cash holdings are inversely related with operating funds and leverage and in direct relation with cost of external financing and growth opportunities. He also found that real estate firms prefer to hold less cash to mitigate agency problem. Isshaq, Bokpin and Onumah (2009) with the sample from Ghana Stock Exchange observed determinants of corporate cash holdings and found leverage, share price, and earning volatility significant determinants of cash holdings

Paskelian and Nguyen(2010)with the sample of 1164 Chinese and Indian firms over a 14 year time span and Megginson and Wei (2010) with sample of Chinese privatized firm over 1993-2007 found that smaller more profitable and high growth firms hold more cash and they also conform that view that there is negative relation between debt networking capital and cash holding.Chen and Mahajan (2010) with the sample of firms from 15 European Union countries and 31 non-European countries from 1994-2004 find anti director rights and creditor rights as important determinant of corporate liquidity.

Kim et al. (2011) for a sample of 125 publically traded US restaurant firms over 1997-2008 find that restaurant firms with more potential investment opportunities hold greater amount of cash and large firms prefer to hold cash equivalents. Dividend paying firm was holding less cash Kim et al. (2011) also support this argument that precautionary and transactional motives play an important role in explaining the determinants of cash holding and they are highly influential in corporate cash strategy formulation for US restaurant industry.

3   DETERMINANTS OF CASH HOLDINGS

This section briefly explains the attributes, suggested by the different conditional theories of corporate cash holding and prior investigations, which may affect the firm's cash holding decisions. These attributes are denoted as cash flow, liquidity ,leverage , firm size , dividend , bank debt , market book(proxy of growth opportunities) ,variability ,board independence , managerial ownership and family controller

Cash flow is one of most important determinant of corporate cash holding. Finance literature defines Cash flow as sum of pretax profit and depreciation (Ferreira &Vilela, 2004) (Ozkan & Ozkan 2004).Trade-off model of cash flow states that cash flow act as readymade source of liquidity i.e. they can be seen as substitute to cash (Kim et al. 1998) and there is negative relation between cash flow and cash holdings. Ozkan & Ozkan (2004) in their investigation found a negative relation between cash flows and cash holdings. According to pecking order theory there is a positive relation between cash flows and cash holdings because high cash flow is prediction of smooth operation with more investment opportunity so firm can hold more

cash for precautionary and transactional motives .Opler et al. (1999) and Pinkowitz and Williamson (2001) found a positive relation between cash holding.

Leverage is defined as the ratio of total liabilities to total asset in finance literature and empirical investigations of different authors leverage is explained as a proxy of firm's debt issuing ability .Except pecking order theory all other theories i.e., trade off and cash flow theory predict negative relation between cash holding and leverage. Ozkan & Ozkan (2004) in their empirical investigations observed a negative relation between cash holding and leverage .Though it is common perception that firms with high leverage prefer to hold more cash .According to Ferreira &Vilela (2004) debt is in direct relation with retained earning i.e. it will grow with growth in retained earnings and fall with decline in retained earnings, which is advocating a negative relation between cash holding and leverage but he was unable to give any evidence in favor of this argument .Opler et all. (1999) also found an inverse relation between internal funds and leverage because firms most of the times prefer to have excessive cash to meet financing need than issuing equity which is expensive due to the reason of adverse selection.

Liquidity is the degree to which an asset or security can be bought or sold in the market without affecting the asset's price. Assets with property of liquidity or which can be easily bought or sold are known as liquid assets, these assets include account receivable and inventory. Pecking order theory states a negative relation between cash holding and liquidity.Opler et al (1999), Ferreira &Vilela, (2004) & Ozkan & Ozkan (2004) all observed a negative relation of liquidity and cash holding with argument that firm can satisfy its precautionary and transactional needs with liquid asset and it can act as proxy for cash

Firm Size is natural log of total asset .Trade off theory of cash flow suggest negative relation between cash flow and firm size and other two theories i.e. pecking order theory and free cash flow theory predicts a positive relation between cash flow and firm size . Faulkendra (2002) observed a negative relation he found that cash holding and economies of scale has negative relation .Ferreira &Vilela (2004) found that small firms hold more cash. Pinkowitz and Williamson (2001) and Bates et al.(2009)observed a negative relation between cash flow and firm size for US firms, all results are supporting tradeoff view .Ozkan & Ozkan (2004) observed a positive relation between cash holding and firm size Opler et al (2009) also found a positive relation between firm size and cash holding

Market to Book ratio is the ratio of market value of equity t‌o book value of equity . Ozkan & Ozkan(2004), Paskelian and Nguyen(2010), Wei (2010) all found a positive relation between firms growth opportunities and cash holdings .All three theories predicts a positive relation between growth opportunities .

Dividend is ratio of dividend payment to total asset, Ozkan & Ozkan (2004) Ferreira and Vilela (2004) found a negative relation between dividend payments and cash holdings it means dividend paying firm can hold less cash, because they can raise fund for any precautionary or transactional motive by just cutting their dividend. If a firm is not paying dividend then it has two options first it can consult capital market for fund raising or can raise the level of cash holding by issuing more equity (Opler et al. ,1999)

Bank Borrowing is the ratio of total bank borrowing to total liabilities all three theories of corporate cash holdings are suggesting a negative relation between bank debt and cash holding .The reason for this negative relation can be that firms with more bank debt in capital structure are in good relations with bank and can raise funds for emergency and transactional motives whenever they need , meanwhile another possible reason for this negative relation is that firm with more bank debt in their capital structure face monitoring from financial institutions which decreases the managerial discretion of decisions about cash holding . Ozkan & Ozkan (2004) and Ferreira and Vilela (2004) found a negative relation between bank debt and cash holding

Variability is ratio of standard deviation of cash flows to average total asset (Ozkan & Ozkan., 2004). According to trade off theory there is positive relation between cash holdings and cash flow variability. Opler et al. (1999) Ozkan & Ozkan (2004) Ferreira and Vilela (2004) Bigelli & Sanchez-Vidal, (2010) found a positive relation between cash flow variability and cash holdings .The reason of this positive relation can be that firm with more volatile cash flow and less liquid asset hold more cash to meet transactional and precautionary need.

Corporate governance: The capital structure and cash holding decisions are central to the conflict between shareholders and managers, almost every discussion on corporate governance try to answer the question of managerial entrenchment and its impact on cash holdings. According to agency theory entrenched managers prefer cash holding than dividend distribution and these cash holdings cause agency problem of free cash flow (Ditmar et al., 2003; Jensen, 1986).Level of Cash holding is a subject of managerial discretion because conversion of cash to private benefits is much more easy than any other asset .Weak corporate governance leads to excessive cash holdings (Ditmar et al., 2003). Kuan, Li and Chu (2011) with the sample

of Taiwanese family owned firms and Ozkan & Ozkan (2004) with the sample of UK firms observed that corporate governance has significant impact on formulation of corporate cash holding policy

To examine the role of corporate governance in formulating corporate cash policy we are using flexibility, spending and shareholder power hypotheses which earlier used by Harford et al. (2008) and Kuan, Li, and Chu (2011).They find that the influence of managerial ownership and board independence have different impacts on family firms compared to their impact on non-family firms. *Flexibility hypothesis* states that to exploit unanticipated investment opportunities management is allowed to hold a significant and comparatively larger amount of cash .*Spending hypothesis* in contradiction with flexibility hypothesis suggest a low level of cash holding .It is considering agency cost as important determines which states that entrenched managers find spending more useful than excessive cash holding (Harford. ,2008 and Kuan et al. , 2011).*Shareholding hypothesis* suggests large cash holdings ,according to firms operating in imperfect capital markets face information asymmetry which make external financing difficult and costly so to minimize information asymmetry. So firms with majority shareholder hold large amount of cash for shareholders wealth maximization.

Managerial Ownership is the percentage ownership by company director's .Managerial ownership and cash holding has nonlinear relation i.e. at lower level of managerial ownership firms hold low level of cash, than with increasing ownership level of cash holding increases and at very high level of managerial ownership start decreasing (Ozkan &Ozkan 2004). The positive relation at higher level managerial ownership highlighting entrenchment effect i.e. to peruse self-interest manager yearns for large cash holding, however risk aversion is also a possible reason of this positive relation because at higher level managerial ownership manger becomes more risk averter(Opler et al.,1999).Some observed cases revealing realignment of interest at very high level of managerial ownership which is clear from negative and significant relationship between MAN^3 and Cash holding (Ozkan & Ozkan 2004).

Board structure plays an important role in determining corporate cash holdings to measure the impact of board structure on cash holdings ,this study has included its two variables i.e. board independence and CEO duality a dummy in analysis. Smaller independent board's low managerial ownership reduces information asymmetry which leads to lower cash holdings (Ozkan and Ozkan, 2004). Brenes et al. (2011) and Desai et al. (2005) suggest that outside board monitoring can provide better Shareholder protection and improve family business performance. Opler et al. (1999) and Kuna, Li, and Chu (2011) suggest a positive relation between board independence and managerial cash holdings .Flexibility hypothesis predicts a positive relation between cash holdings and CEO duality. But spending hypothesis predicts negative relation between cash holdings and CEO duality .Opler et al. (1999) also argued that high managerial control rights can stimulate mangers to peruse their self-interest at the cost shareholders.

Controller is the central in addressing agency problem because when the ultimate controllers' ownership goes beyond a certain level, than they have the strong controlling power to affect corporate cash policy. Claessens et al. (2000), La Porta et al. (1999) and Mok et al. (1992) define ultimate controller an individual or owner having ownership rights 10 % more.Firms with *family control* are tuff because along with business requirements managers have to satisfy family owner interest (Claessens et al., 2000, Anderson et al., 2003 Fama and Jensen, 1983: La Porta et al., 1999; La Porta et al., 2000: Ward, 1987). For retention of their birth control family controller can demand polices for satisfaction of their interest at the cost of minority shareholders. Ozkan and Ozkan, (2004) in their sample of UK firms and Kuan, Li, and Chu (2011) with the sample of Taiwanese family owned firms observed that firms with families as the ultimate controllers tend to hold more cash. However, the incentives for managers to hold cash in such firms remain unclear. Spending and shareholding hypothesis suggest positive while flexibility hypothesis suggests negative relationship between family dummy and cash holdings.

4 DATA AND METHODOLOGY

4.1 DATA

In order to investigate the impact of corporate governance on corporate cash holding the data taken from annual reports of non-firms listed on Karachi Stock Exchange Pakistan during 2008-2012. Initially, all non-financial firms listed in KSE were included in the sample; however firms with incomplete data were deleted from analysis. Thus, final sample composed of a balanced panel of 138 firms over a period of 5 years. Table 1 presents the descriptive statistics of main variables used in our study.

The mean cash ratio over the sample is 5 %.The average of managerial ownership is 22% .The mean of non-executive director to total director is 84%.In an average firm, the number of executive director and non-executive directors are 1.32 and 6.94 respectively .So on average board of Pakistani companies is comprise of 8.28 directors. In 27 % companies CEO and chairman is a same individual. At the 10% level 37 % companies are being controlled by families.

Table 1. Descriptive statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
$CASH$	690	0	1	0.05	0.078
$CFLOW$	690	0	1	0.12	0.133
LIQ	690	-1	1	0.04	0.183
LEV	690	0	1	0.55	0.202
$MRKTBOOK$	690	-5	3378	69.57	378.936
$BDEBT$	690	0	1	0.37	0.287
$SIZE$	690	11	20	15.42	1.462
$VARIABILITY$	690	0	134	4.71	11.705
$DIVIDEND$	690	0	0	0.03	0.059
MAN	690	0	1	0.22	0.255
MAN^2	692	0	1	0.11	0.188
MAN^3	690	0	1	0.07	0.152
EX_DIR	690	1	6	1.32	1.7884
NON_EX_DIR	690	2	13	6.94	0.8420
NON_EX/DIR	690	0	1	0.84	0.103
CEO_COB	690	0	1	0.27	0.445
$FAMILY$	690	0	1	0.37	0.483
Valid N (listwise)	690				

4.2   METHODOLOGY

Panel data methodology is adopted in this study. Panel data involves pooling of observations on cross-section units over several time periods and provides results that are simply not detectable in pure cross-sections or pure time-series studies. The panel regression equation differs from a regular time-series or cross-section regression by the double subscript attached to each variable.

The general form of panel data model can be specified more compactly as

$$Y_{it} = \alpha_{it} + \beta X'_{it} + \varepsilon_{it} \tag{1}$$

i=1,………………….,138, *t* =1,…………………, 5

Where the subscript *i* denoting the cross-sectional dimension, *t* representing the time-series dimension. Y_{it} represent the dependent variable in the model, which refers to the firm's debt ratio. α is constant term over time *t* and specific to the individual firm *i* . β is the vector of estimated coefficients. X_{it} contains a set of explanatory variables in the estimation models and ε_{it} is the error term. The error vector given by

$$\varepsilon_{it} = v_{it} + u_{it} \tag{2}$$

Where v_{it} the individual is effect of each of the industrial companies and u_{it} is the error which assumes normal distribution.

To measure the impact of corporate governance on corporate cash holding, we used Ozkan & Ozkan (2004) models, which are given below

$$CASH_{it} = \alpha_0 + \alpha_1 CFLOW_{it} + \alpha_2 LIQ_{it} + \alpha_3 LEV_{it} + \alpha_4 BB + \alpha_5 MBR_{it} + \alpha_6 SIZE_{it} + \alpha_7 VAR_{it} + \alpha_8 DIV_{it}$$
$$+ \alpha_9 MAN_{it} + \alpha_{10} MAN^2{}_{it} + \alpha_{11} MAN^3{}_{it} + \varepsilon_{it} \tag{3}$$

$$CASH_{it} = \alpha_0 + \alpha_1 CFLOW_{it} + \alpha_2 LIQ_{it} + \alpha_3 LEV_{it} + \alpha_4 BB + \alpha_5 MBR_{it} + \alpha_6 SIZE_{it} + \alpha_7 VAR_{it} + \alpha_8 DIV_{it}$$
$$+ \alpha_9 MAN_{it} + \alpha_{10} MAN^2{}_{it} + \alpha_{11} MAN^3{}_{it} + \alpha_{12} CEOD_{it} + \alpha_{13} NEDDIR_{it} + \varepsilon_{it} \tag{4}$$

$$CASH_{it} = \alpha_0 + \alpha_1 CFLOW_{it} + \alpha_2 LIQ_{it} + \alpha_3 LEV_{it} + \alpha_4 BB + \alpha_5 MBR_{it} + \alpha_6 SIZE_{it} + \alpha_7 VAR_{it} + \alpha_8 DIV_{it}$$
$$+ \alpha_9 MAN_{it} + \alpha_{10} MAN^2{}_{it} + \alpha_{11} MAN^3{}_{it} + \alpha_{12} FAM_{it} + \varepsilon_{it} \tag{5}$$

Where $CASH_{it}$ is the ratio of cash and cash equivalent to total asset for the ith term of t, $CFLOW_{it}$ is the ratio of cash flow to total asset for the ith firm of time t , LIQ_{it} is the liquidity for i^{th} firm of t time, BB_{it} is ratio of bank borrowing to total debt for i^{th} firm of t time , MBR_{it} is market to book ratio for i^{th} firm of t time , $SIZE_{it}$ is natural log of asset for i^{th} firm of t time VAR_{it} is cash flow variability for i^{th} firm of t time, DIV_{it} is the ratio of dividend paid to total asset of ith firm for time , MAN_{it} is managerial ownership for i^{th} firm for time t , $MAN^2{}_{it}$ is square of managerial ownership for i^{th} firm of time t , $MAN^3{}_{it}$ is cube of managerial ownership for i^{th} firm of time t , $CONT_{it}$ Shareholder with shareholding 10% or more for i^{th} firm of time t , $NAEDDIR_{it}$ is the ratio of non-executive directors to total directors for i^{th} firm of time t . $CEOD_{it}$ is dummy variable which gives value 1 if CEO and Chairman for i^{th} firm of time t is same and 0 otherwise , FAM_{it} is family controller for i^{th} firm of time t , $INST_{it}$ is institutional ownership for i^{th} firm of time t α_{it} is intercept , $\alpha_1 - \alpha_{13}$ are coefficients of concerned variables and ε_{it} is random error term for i^{th} firm of time t .In above equations $CASH_{it}$ is dependent and $CFLOW_{it}$, LIQ_{it} , BB_{it} , MBR_{it} , $SIZE_{it}$, VAR_{it} , DIV_{it} , MAN_{it} , $MAN^2{}_{it}$ $MAN^3{}_{it}$ $CONT_{it}$ $NAEDDIR_{it}$. $CEOD_{it}$, FAM_{it} , are independent variables in or study.

5   RESULTS AND DISCUSSION

We estimated the pooled OLS model. The estimation results are presented in Table 2, which indicates that profitability, size, non-debt tax shields, tangibility, and liquidity proved to be significant in confidence level of 5 percent. Earnings volatility found less significant while the variable growth opportunities found highly insignificant. The OLS regression has high adjusted R square appears to be able to explain variations in the debt ratio. Furthermore, the F-statistic confirms the significance of the OLS regression model.

The relationship between cash flows and cash holding is positive and significant. The positive relationship is consistent to the predictions of the pecking order theory which states that firm with high cash flow prefer to hold a significant amount of cash. Moreover, it indicates the ability of firms to meet their transactional requirements as well as to avail the benefits of unexpected opportunities that arise with the passage of time. The positive relationship between cash flow and cash holdings is consistent with earlier empirical studies such as Opler et al. (1999), Pinkowitz & Williamson (2001) and Afza and Adnan (2007).

The relationship between liquidity and cash holdings is negative but significant. This negative relation is consistent to the prediction of trade off theory which states that firm with more liquid assets holds less cash. Furthermore it indicates that firms with abandon liquid assets use their assets to meet cash requirements. The negative but significant relation between liquidity and cash holding is consistent with prior empirical studies of Opler et al. (1999), Pinkowitz & Williamson (2001), Ozkan & Ozkan (2004), Ferreira &Vilele (2004) Bates et al (2009).

Leverage is in negative but statistically significant relation with Cash holdings. This negative relation is consistent to the predictions of all three theories i.e. pecking order theories ,trade off theories and cash flow theories which .These theories state leverage as proxy for debt so firm with more debt in their capital structure prefer low amount of cash. This negative result between leverage and cash holding is consistent with prior empirical findings of Opler et al. (1999), Pinkowitz & Williamson (2001), Ozkan & Ozkan (2004), Ferreira &Vilele (2004) Bates et al (2009).

The relationship between bank borrowing and cash holding is negative but significant. This finding is consistent with empirical findings of Ozkan & Ozkan (2004) and Ferreira and Vilela (2004). This negative relation intimating that firms with more bank debt in their capital structure are in good relations with bank and can raise funds for emergency and transactional motives. Meanwhile another reason for this negative relation is that firm with more bank debt in their capital structure face monitoring from financial institutions which decreases the managerial discretion of decisions about cash holdings.

Table 2. OLS regression of cash holdings on managerial ownership, family controller, board structure and other firm characteristics

Dependent Variable : $CASH$	(1)	(2)	(3)
$CFLOW$	0.180***	0.179***	0.180***
	(0.027)	(0.027)	(0.027)
LIQ	-0.189***	-0.194***	-0.186***
	(0.019)	(0.019)	(0.019)
LEV	-0.198***	-0.199***	-0.197***
	(0.017)	(0.019)	(0.017)
MBR	0.082***	0.080***	0.082***
	(0.000)	(0.000)	(0.000)
BB	-0.300***	-0.301	-0.299
	(0.011)	(0.011)	(0.011)
$SIZE$	-0.077**	-0.081**	-0.080**
	(0.002)	(0.002)	(0.002)
VAR	-0.111***	-0.114***	-0.112***
	(0.000)	(0.000)	(0.000)
DIV	0.012	0.019	0.011
	(0.058)	(0.059)	(0.058)
MAN	-0.631***	-0.600***	-0.638***
	(0.072)	(0.072)	(0.072)
MAN^2	1.068**	0.992**	1.081**
	(0.216)	(0.219)	(0.216)
MAN^3	-0.576*	-0.524*	-0.582*
	(0.167)	(0.170)	(0.167)
$NEDDIR$		0.984	
		(0.026)	
$CEOD$		-0.022	
		(0.006)	
$FAMILY$			-0.200
			(0.006)
R^2	0.259	0.261	0.260
Adjusted R^2	0.247	0.246	0.246
F-statistic	21.553	18.334	19.749
Prob.(F – Statistics)	0.000	0.000	0.000
S.E of Regression.	0.067	0.068	0.068
Number of firms	138	138	138

*,**,*** denote statistical significance the 0.10, 0.05 and 0.01 level respectively

The relationship between markets to book ratio is positive and insignificant which is consistent with Ferreira and Vilela (2004), Ozkan & Ozkan (2004), Opler et al. (1999), Kim et al. (1998). Market to book ratio is proxy of firms growth opportunities so firms with high market to book ratio hold large amount of cash (Opler et al., 1999).

The relationship Between Size and cash holding is negative and insignificant. This negative relation is in accordance with predictions of trade off theory which state size as an inverse proxy of information asymmetry .Which means smaller firms have more information asymmetry than larger firms. Firms view this decreased information asymmetry as positive signal to banks because information asymmetry problem cause some additional borrowing constrains which leads to costly external financing (Kim et al., 1998) .As firm with larger size can easily raise funds from capital market, so one can expect a negative relation between cash holdings and firm size. This negative result is consistent with prior empirical findings of Ferreira &Vilela, (2004), Pinkowitz and Williamson (2001) and Bates et al. (2009) which means firm with larger size hold less cash

There is positive but insignificant relationship between cash holding and dividend. This positive relation indicates that firms which pay dividends hold more cash. This result is consistent with the prior empirical findings of Opler et al (1999) and Afza and Adnan (2007).

Cash flow variations have statistically significant and positive relation cash holdings. This finding is consistent with predictions of trade off theory which states that to avoid liquidity crises firm with high cash flow variation holds more cash. Moreover it indicates that firms with volatile cash flow take cash as buffer to increase chances of survival and to avoid unexpected cost of liquidity. This positive relation between cash flow volatility and cash holdings is consistent with earlier empirical findings of Opler et al. (1999) Ozkan & Ozkan (2004) Ferreira and Vilela (2004) Bigelli & Sanchez-Vidal, (2010)

The relationship between managerial ownership (MAN) is negative and significant at 1% which is consistent with Ozkan & Ozkan (2004) and confirming a common view that there is interest alignment of shareholder and manger at lower level managerial ownership (Opler et al., 1999). MAN^2 is in positive and statistically significant relationship with managerial ownership .This positive relation at higher level managerial ownership highlighting entrenchment effect i.e. to peruse self-interest manager yearns for large cash holding, however risk aversion is also a possible reason of this positive relation because at higher level managerial ownership manger becomes more risk averter (Opler et al., 1999). Some observed cases revealing realignment of interest at very high level of managerial ownership which is clear from negative and significant relationship between MAN^3 and Cash holding (Ozkan & Ozkan 2004).From above results it is clear that cash holding and managerial ownership has nonlinear relationship i.e. at lower level of managerial ownership firms hold less cash, than with increasing ownership level of cash holding increases and at very high level of managerial ownership start decreasing and relationship again turn to positive .

There is positive but insignificant relation between NEDD and cash holding .This positive relation between board independence is consistent with prior empirical findings of Opler et al (1999), Brenes et al (2011) and Desai et al, (2005). This positive relation indicates that firm with more outsider independent directors hold more cash. The relationship between COED and cash holding is negative and insignificant .The insignificant relation of board composition variables and cash holdings indicates that, the impact of managerial ownership on cash holding does not change with board composition. As the prime responsibility of board of directors is to monitor the actions of top management so board composition has no significant impact on the level of cash holdings rather, it has impact on usage of cash (Ozkan and Ozkan .,2004 and Ditmar and Smith .,2005).

Cash holding and family controller has negative but statistically significant relation. This negative relation is consistent with flexibility hypothesis which suggests that family controlled firms with higher managerial ownership tend to hold less cash. This statistically significant negative relation between family ownership is also consistent with prior empirical finding of Y Kusnadi (2011).

6   CONCLUSION

To analyze the impact of corporate governance and firm characteristics pooled ordinary least square(OLS) technique is used .In our regression analysis cash flow is the only variable which is statistically significant and positively related to cash holdings. Alternatively, liquidity, leverage, bank borrowing variability of cash flow and family dummy are significantly and negatively related to cash holdings. Dividend, market-to-book ratio, ratio of non-executive to total directors and controller dummy are positively whereas firm size institutional dummy and CEO duality are negatively related to cash holdings but the relationships are insignificant. In particular managerial ownership (MAN) and MAN^3 is negative but significant however MAN^2 is positively related to cash holdings. These variations in sings indicate the non-linear relationship between managerial ownership and cash holdings. The positive relation between cash flow and cash holdings indicates the ability of firms to meet their transactional requirements as well as to avail the benefits of unexpected opportunities that arise with the passage of time. The negative relation between Liquidity and cash holdings indicates that firms with abandon liquid assets use their assets to meet cash. The negative relation between leverage and cash holdings indicates that firms with more debt in their capital structure prefer to hold low amount of cash. The positive relation between market to book ratio and cash holdings indicates that firm with potential growth opportunities prefer large cash holdings. The negative relation between firm size and cash holdings indicates that larger firm with decreased information asymmetry can easily excess to capital market so they can afford low cash holdings. The positive relation between dividend payments and cash holdings indicates that dividend paying firms hold more cash. The positive relation between cash flow volatility and cash holdings indicates that firms with volatile cash flow take cash as buffer to increase chances of survival and to avoid unexpected cost of liquidity. The insignificant relation of board composition variables and cash holdings indicates that, the impact of managerial ownership on cash holding does not change with board composition. The negative relation between family and cash holdings indicates that

family controlling firms preffer low cash holding In sum these findings are consistent with all prior investigations and cash holding theories .From our findings we can conclude a negative relation between corporate governance and cash holdings.

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APPENDIX. A

Variable	Proxy	Definition
Dependent Variable		
Cash	$CASH_{it}$	Ratio of total cash and equivalent to total asset
Independent Variables		
Cash Flow	$CFLOW_{it}$	Ratio of cash flow to total asset. Cash flow is the sum of profit before taxes and depreciation.
Liquidity	LIQ_{it}	Ratio of (current asset – current liabilities.+ cash) to total asset
Leverage	LEV_{it}	Ratio of total debt to total asset
Bank Debt	BB_{it}	Ratio of total bank borrowing to total asset
Market Book	MBR_{it}	Ratio of market value of equity to book value of equity
Size	$SIZE_{it}$	Natural log of asset prices
Variability	VAR_{it}	Ratio of standard deviation of cash flows to average total asset
Dividend	DIV_{it}	Ratio of dividend payment to total asset
Managerial Ownership	MAN_{it}	% of equity ownership by directors.
	MAN_{it}^{2}	Square of Managerial Ownership
	MAN_{it}^{3}	Cube of Managerial Ownership
Non-Executive Directors	$NEDDIR_{it}$	Ratio of number of non-executive directors to total number of directors
CEO-COB	$CEOD_{it}$	DUMMY : 1 if CEO and COB is same individual 0 otherwise
Family	FAM_{it}	DUMMY : 1 if there is controlling shareholder in the firm is family and 0 otherwise

APPENDIX .B

Description of Sample

Sr No.	Sector	No. of Companies	%age
1	Automobiles	12	8.7
2	Cement	16	11.59
3	Chemical	20	14.49
4	Energy	5	3.62
5	Electronics	1	0.72
6	Food	23	16.67
7	General	10	7.24
8	Media	4	2.90
9	Minerals	6	4.34
10	Paper	4	2.90
11	Petroleum	7	5.07
12	Textile	29	21.10
13	Transport	1	0.72
TOTAL		138	100