Effects of Excess Cash, Board Attributes and Insider Ownership on Firm Value: Evidence from Pakistan

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Abstract

The purpose of this paper is to investigate whether excess cash, board attributes (i.e. board size, board independence and CEO duality) and insider ownership affects the value of the firm. Data were taken from annual reports of non-financial firms listed on the Karachi Stock Exchange (KSE) Pakistan during 2008-2012. Pooled ordinary least squares method used to estimate the effects of excess cash and internal governance indicators on the value of the firm. Our results indicate that excess cash is significantly negatively related to firm value. Excess cash along with board size is significant and negatively related to firm value. Excess cash along with insider ownership is significant and negatively related to firm value. Control variables namely leverage and dividends are positively while firm size is negatively related to firm value in all regressions. In sum, empirical results indicate that excess cash, board size and insider ownership have material effects on the value of the firm. Moreover, findings of this study provide support to managers to understand the impact of excess cash and internal governance measures on firm value. In addition, findings provide support to regulatory authorities to frame regulations that improve the level of corporate governance in the country.

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Keywords: Board size, Board independence, CEO duality, Excess cash, Firm value, Insider ownership

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1. INTRODUCTION

Cash is the oil that lubricates the economy. Finance literature suggests that firms generally hold cash for transactional motives, safety motives and speculative motive. Jensen (1986, p.323) suggests that managers have incentives to cause their firms to grow beyond the optimal size because growth increases their power by increasing the resources under their control. However, conflicts between managers and shareholders become problematic when organizations generate substantial free cash. The issue is how to motivate the managers to dispense free cash among the shareholders rather than investing it at below the cost of capital or wasting it on organizational inefficiencies. Debt can be an effective substitute for dividends because by issuing debt managers are bound to fulfil their promise to pay out future cash flows in a way that cannot be attained simply by dividend increases. Moreover, debt gives right to the lenders to take the firm into a bankruptcy court if managers do not keep their promise. Kim et al. (1998) and Opler et al. (1999) suggests that firms determine their optimal cash balance through a trade-off between costs and benefits of holding an additional dollar of cash. Alternatively, Dittmar et al. (2003) observed that firms in countries with weak external legal protection hold more cash than firms in countries where legal protection is strong. Harford et al. (2008) suggests that firms with weak shareholder rights protection hold little cash than firms with strong shareholder rights protection.

Several empirical studies have been conducted in developed countries to investigate the effects of cash holdings along with internal governance measures on the value of the firm. Alternatively, little is known about the effects of cash holdings and governance measures on firm value in developing countries. More importantly, results of earlier empirical studies are both inconsistent and unclear. Thus equivocal findings and a little research in developing countries in general and Pakistan in particular suggest the need for this empirical investigation. Notably, to the authors' knowledge no study has yet explored the effects of excess cash and internal governance measures on firm value in Pakistan. We are sure that findings of this study will not only fill a gap in the literature but also provide some support to the managers to understand the effects of excess cash along with internal governance indicators on firm value. Moreover, findings of this study provide support to the regulatory authorities in understanding the effectiveness of the code of corporate governance (CCG) and formulating new regulations that can improve the level of corporate governance in Pakistan.

The rest of the paper is organized as follows. Section 2 presents the literature review. Section 3 describes the data and research methodology. Section 4 presents regression results. Section 5 provides a discussion on the empirical results. Finally, Section 6 presents conclusion of the study and highlight the avenues for future research.

2. LITERATURE REVIEW

A number empirical studies have explored the effects of cash and governance measures on firm value but unfortunately findings of these studies are mixed. For instance, Stulz (1988) conducted a study to empirically investigate how managerial control of voting rights affects the firm value and financing policy. His findings indicate that an increase in the fraction of voting rights controlled by the management decreases the probability of a successful tender offer and increases the premium offer if a tender offer is made. Moreover, his findings suggest that management can alter the proportion of the votes it controls through capital structure changes, the acquisition of shareholder clienteles and introducing amendments in the charter. Weisbach (1988) analyzed the data of 495 firms listed on NYSE during 1977-1980 to investigate the relationship between the monitoring of CEOs by inside and outside directors and CEO resignations. He observed that there is a stronger association between

prior performance and the probability of a resignation for companies with outsider dominated boards than for companies with insider dominated boards. Notably, this finding does not appear to be a function of ownership effects, size effects or industry effects. McConnell and Servaes (1990) conducted a study to empirically investigate the impact of equity ownership on firm value using a sample of 1,173 firms for 1976 and 1,093 firms for 1986. They found a curvilinear relationship between common stock owned by the insiders and value of the firm. Moreover, they observed a positive relationship between institutional investors and value of the firm. They found their results congruent with the hypothesis that firm value is a function of the structure of equity ownership.

Agrawal and Knoeber (1996) analyzed the data of nearly 400 large US firms to explore the impact of different governance mechanisms to control the agency problem between managers and shareholders and their effects on firm performance. Their results indicate a positive association between insider shareholding and firm performance. However they observed that the impact of insider shareholding on firm performance disappeared when it is estimated along with other variables included in their study. They found a negative relationship between outside directors and firm performance. They suggest that negative relationship between outside directors and firm performance may be due to presence of too many outside directors on the board. Baliga et al. (1996) analyzed the data of US corporations during 1980 to 1991 to examine the effects of CEO duality on performance. Their results indicate that market is indifferent to the changes in a firm's leadership structure i.e. unitary leadership or dual leadership. Moreover, they found a little support that operating performance change due to alterations in duality structure. In addition, they found a weak relationship that the firm's long-term performance is affected due to changes in duality structure. Yermack (1996) analyzed the data of 452 large US industrial companies during 1984-1991 to investigate the impact of board size on firm value. He observed an inverse relationship between board size and the value of the firm.

Opler et al. (1999) analyzed the data of US firms during 1971-1994 to investigate the important factors that affect the corporate cash holdings. They observed that firms with riskier activities and with strong growth opportunities tend to hold more cash. On the other hand, firms that have easy access to capital markets tend to hold less cash. They found a little support regarding excess cash has a large short run impact on capital expenditures, dividend payout to shareholders, and acquisition spending. Kiel and Nicholson (2003) analyzed the data of 348 largest firms in Australia to investigate the relationship between board demographics and firm value. Their results indicate that board size is positively related to firm value. Moreover, their findings show a positive association between the proportion of inside directors and performance.

Mak and Kusandi (2005) analyzed the data of Singaporean and Malaysian firms during 1999-2000 to investigate the impact of corporate governance variables on firm value. Their results indicate that corporate governance mechanisms partially affect the firm value. More importantly, they have shown an inverse relationship between board size and firm value which confirms the finding of earlier empirical studies such as Yermack (1996) and Eisenberg et al. (1998). Abor and Biekpe (2007) analyzed the data of small and medium enterprises in Ghana. Their results show that board composition, board size, CEO duality, inside ownership, foreign ownership, level of management skill and family business are some factors that positively affect the firm performance. Moreover, their findings suggest that the code of corporate governance provides assistance to small and medium enterprises by instilling better management practices and in turn positively influence their performance. Dittmar and Mahrt-Smith (2007) analyzed the data of US firms during 1990-2003 to investigate how corporate governance effects firm value by comparing the value and use of cash holdings in poorly and well-governed firms. They observed that governance has material

effects on value through its impact on cash. For instance, one dollar of cash in a poorly governed firm is valued at only forty two cents to eighty eight cents. Good governance approximately doubles this value. Furthermore, they have shown that firms with poor corporate governance waste cash quickly in ways that significantly reduce the firm performance. However, the negative affect of large cash holdings on future operating performance may be wiped out if the firm is well-governed.

Mashayekhi and Bazaz (2008) analyzed the data of companies listed in Tehran stock exchange during 2005-2006 to investigate the impact of different attributes of corporate governance on three different measures of firm performance namely return on assets, earnings per share and return on equity. Their results indicate that board size is negatively related to firm performance. Moreover, their findings suggest that presence of independent directors on the board improves the firm performance. They observed no relationship between CEO duality and firm performance. Furthermore, they observed that presence of institutional investors on the boards is unrelated to firm performance. Kusandi (2011) analyzed the data of firms listed on Singapore and Kuala Lumpur stock exchanges during 2000-2005 to estimate the relationship between firm level governance mechanisms and cash holdings along with their combined effects on firm value. He observed that internal governance mechanisms such as board characteristics and ownership concentration are important predictors of corporate cash holdings. Moreover, his findings suggest that firms with poor governance hold more cash. The results of the study also suggests that incremental holding of excess cash is negatively related to firms with unitary leadership structure, firms with pyramidal ownership structure, and family controlled firms. Finally, shareholders tend to pay less for those firms if they anticipate that these firms are prone to more severe agency problems.

Sheikh et al. (2013) analyzed the data of 154 firms listed on Karachi stock exchange during 2004-2008 to investigate the impact of internal attributes of corporate governance namely board size, board composition, CEO duality, managerial ownership and ownership concentration on firm performance measured as earnings per share, return on assets, return on equity and market-to-book ratio. Their results indicate that outside directors, board size and managerial ownership are negatively related to firm performance. Alternatively, ownership concentration is positively related to firm performance. CEO duality is positively related to earnings per share. Furthermore, they observed that leverage is negatively while firm size is positively related to all measures of firm performance. Kumar and Singh (2013) analyzed the data of 176 firms listed on Bombay stock exchange during 2008-2009 to examine the effects of board size and promoter ownership on firm value. Their results indicate that board size is negatively while promoter ownership is positively related to corporate performance. Moreover, their results indicate that when proportion of promoter ownership is above than the critical level of forty percent then promoters' interest become aligned with the company and in turn positively affect the performance. Sun and Wang (2013) analyzed the data of Chinese listed firms to investigate the effects of corporate ownership structure on market value of excess cash. They observed that state ownership has a positive effect, as the market value of excess cash is greater in state owned firms than in privately controlled firms. Moreover, they observed that expropriation by controlling shareholders is significantly higher in privately controlled firms than in state owned firms and increases with excess cash. They found their results consistent with the view that the market believes controlling shareholders are more likely to extract the private benefits associated with cash reserves. Rehman and Wang (2015) analyzed the data of Chinese listed firms during 2001-2013 to understand the adjustment of speed of corporate cash holdings and to explore the factors that affect the corporate cash holdings. Their results indicate a lower adjustment coefficients for Chinese listed firms compared to firms in developed countries. Moreover, they found that operating cash flow,

firm size, leverage, capital expenditures and net working capital are negatively while growth is positively related to corporate cash holdings. Furthermore, they observed that board independence shows an ambiguous relationship with corporate cash holdings. Alternatively, board size shows a significant negative relationship with corporate cash holdings. Sheikh and Khan (2015) analyzed the data of non-financial firms listed on Karachi stock exchange during 2008-2012 to examine the effects of board attributes and insider ownership on cash holdings. They observed that board independence is positively while insider ownership is negatively related to corporate cash holdings. Moreover, they observed that family firms hold more cash than the non-family firms.

3. RESEARCH METHODOLOGY

3.1 Data

This paper empirically investigates the impact of excess cash, board attributes, and insider ownership on the value of the firm. The data were taken from annual reports of companies listed on the Karachi Stock Exchange (KSE) Pakistan during 2008-2012. Stock price data were obtained from the publications of KSE. All non-financial firms listed on KSE during 2008-2012 were included in the study however firms with incomplete data relevant to variables used in the study were deleted from analysis. Resultantly, final sample set consists of 189 firms over a period of 5 years. Firms included in the sample belongs to different industrial groups/sectors such as automobile and parts, chemical, construction and materials, electricity, engineering, food producers and beverages, general industries, household goods, pharmaceutical and bio-tech and textile.

3.2 Variables

Table 1 presents the definitions of variables. Definitions are largely adopted from Dittmar and Mahrt-Smith (2007), Kusnadi (2011).

Table 1: Definition of Variables

Variable	Proxy	Definition
Dependent variable		
Firm value	FV_{it}	Ratio of market value of equity + book value total liabilities to net assets. Net assets defined as the difference between total assets and cash & cash equivalents.
Independent variables		
Excess Cash	$ECASH_{it}$	Difference between actual cash and predicted cash. In other words, it is the residual of a cash levels regression.
Board Size	BS_{it}	Natural log of total number of directors on the board.
Board Independence	BI_{it}	Ratio of independent non-executive directors on the board to total directors on the board.
CEO Duality	$CEOD_{it}$	Dummy variable, 1 if chairman of the board is also the CEO or the managing director of the company, 0 otherwise.
Insider Ownership	INS_{it}	Ratio of controlling rights held by the directors, their spouse and family members.
Control variables		
Leverage	LEV_{it}	Ratio of total liabilities to net assets.
Firm size	$SIZE_{it}$	Natural log of net assets.
Dividend	DIV_{it}	Ratio of total cash dividend to net assets.

3.3 Research Methodology

The pooled ordinary least squares method used to estimate the combined effects of excess cash and internal governance indicators on firm value. First of all, we have computed the amount of excess cash defined as the difference between actual and predicted cash. In other words, the excess cash is the residual of a cash levels regression. Consistent with Dittmar and Mahrt-Smith (2007) the amount of excess cash is determined using the following equation:

$$CH_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 MV_{it} + \beta_3 NWC_{it} + \beta_4 CF_{it} + \beta_5 CE_{it} + \varepsilon_{it} \quad (1)$$

where CH_{it} is corporate cash holdings measured as natural log of the ratio of cash & cash equivalent to net assets. $SIZE_{it}$ is firm size measured as natural log of net assets, MV_{it} is market value of equity defined as ratio of market value equity to net assets, NWC_{it} is net working capital defined as ratio of the difference between current assets and current liabilities to net assets. CF_{it} is free cash flow defined as ratio of earnings after taxes to net assets, CE_{it} is capital expenditures defined as ratio of capital expenditures to net assets.

After determining the value of excess cash, equation 2 estimate the effects of excess cash on firm value.

$$FV_{it} = \beta_0 + \beta_1 ECASH_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 DIV_{it} + \varepsilon_{it} \quad (2)$$

After that combined effects of excess cash and board attributes on firm value are estimated as follows.

$$FV_{it} = \beta_0 + \beta_1 ECASH_{it} + \beta_2 BS_{it} + \beta_3 BI_{it} + \beta_4 CEOD_{it} + \beta_5 (ECASH_{it} \times BS_{it}) + \beta_6 (ECASH_{it} \times BI_{it}) + \beta_7 (ECASH_{it} \times CEOD_{it}) + \beta_8 LEV_{it} + \beta_9 SIZE_{it} + \beta_{10} DIV_{it} + \varepsilon_{it} \quad (3)$$

Moreover, combined effect of excess cash and insider ownership on firm value is determined as follows.

$$FV_{it} = \beta_0 + \beta_1 INS_{it} + \beta_2 (ECASH_{it} \times INS_{it}) + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \beta_5 DIV_{it} + \varepsilon_{it} \quad (4)$$

4. EMPIRICAL FINDINGS

4.1 Descriptive Statistics and Correlation of Variables

Descriptive statistics is presented in Table 2. The mean firm value, measured as market value of equity plus book value total liabilities to net assets, is 1.16. The mean value of excess cash is too low which is computed by taking the difference between the actual and predicted cash. The mean value of natural log of board size is 0.894. The mean CEO duality is 19.6 percent which indicates the cases in which one person holds both positions (i.e. chairperson of board of directors and CEO). Mean insider ownership is 55.5 percent which indicates the proportion of direct and indirect voting rights of directors and their spouse or family members. Mean leverage is 55.8 percent indicating the proportion of net assets financed through total liabilities. The mean natural log of net assets, a proxy for firm size, is 15.15. Finally, mean dividends are 2.2 percent which indicates the proportion of cash dividend distributed among the shareholders in relation to firms' net assets.

Table 2: Descriptive Statistics

Variable	Obs.	Mean	SD	Minimum	Maximum
FV_{it}	945	1.160	1.025	0.243	9.185
$ECASH_{it}$	945	-1.12e-08	1.435	-7.47	3.538
BS_{it}	945	0.894	0.070	0.778	1.204
BI_{it}	945	0.182	0.265	0.000	0.928
$CEOD_{it}$	945	0.196	0.397	0.000	1.000
INS_{it}	945	0.555	0.231	0.000	0.992
LEV_{it}	945	0.558	0.187	0.002	1.061
$SIZE_{it}$	945	15.15	1.418	11.91	19.71
DIV_{it}	945	0.022	0.049	0.000	0.400

Table 3 presents the correlations of variables. Excess cash is positively related to firm value but the relationship is insignificant. Board size is significantly positively related to firm value and excess cash. Board independence is significant and positively related to excess cash and board size. CEO duality is significant and negatively related to board size whereas it is positively related to board independence. Institutional ownership is significantly positively related to firm value and CEO duality whereas it is negatively related to board size and board independence. As control variables are concerned, leverage is significantly positively related to excess cash and institutional ownership. Firm size is significantly positively related to firm value and board size while it is negatively related to CEO duality. Finally, dividends are significant and positively related to firm value, excess cash, board size and firm size whereas dividends are negatively related to CEO duality and leverage. In sum, the size of the coefficients does not suggest any serious problem of multicollinearity among the explanatory variables.

Table 3: Correlation Matrix

Variable	FV_{it}	$ECASH_{it}$	BS_{it}	BI_{it}	$CEOD_{it}$	INS_{it}	LEV_{it}	$SIZE_{it}$	DIV_{it}
FV_{it}	1.000								
$ECASH_{it}$	0.029	1.000							
BS_{it}	0.211***	0.098***	1.000						
BI_{it}	-0.028	0.096***	0.053*	1.000					
$CEOD_{it}$	-0.050	-0.018	-0.188***	0.075**	1.000				
INS_{it}	0.145***	-0.072	-0.111***	-0.146***	0.069**	1.000			
LEV_{it}	-0.018	0.161***	-0.047	0.043	0.034	0.081**	1.000		
$SIZE_{it}$	0.077**	0.001	0.378***	-0.014	-0.083**	-0.029	0.020	1.000	
DIV_{it}	0.633***	0.093***	0.286***	-0.030	-0.060*	0.040	-0.162***	0.197***	1.000

***,**,* Significant at 1%, 5%, and 10% level respectively

4.2 Regression Results

Regression results of equation 2, 3 and 4 are presented in Table 4. Results of equation 2 indicate that excess cash is statistically significant and negatively related to firm value. Results of equation 3 indicate that board size is significant and negatively related to firm value. Interaction of board independence and excess cash, and interaction of CEO duality and excess cash are positively related to firm value but the relationship is statistically insignificant. Regression results of equation 4 show that the interaction of excess cash and insider ownership is significant and negatively related to firm value. The control variables introduced in the regression equations have shown consistent results. For instance, leverage and dividends are statistically significant and positively related to firm value. Alternatively, firm size is significant and negatively related to firm value. The value of R^2 is looking reasonable and appear to be able to explain most of the cross-section variation in firm value.

Table 4: Regression Results of Equation (2), (3) and (4)

Variable	Eq. (2)	Eq. (3)	Eq. (4)
C	1.159*** (4.06)	0.198 (0.50)	0.857*** (2.96)
$ECASH_{it}$	-0.034* (-1.90)	0.958*** (4.22)	0.041 (0.98)
BS_{it}		1.229*** (2.97)	
BI_{it}		-0.029 (-0.31)	
$CEOD_{it}$		-0.026 (-0.40)	
INS_{it}			0.475*** (4.30)
$(ECASH_{it} \times BS_{it})$		-1.120*** (-4.43)	
$(ECASH_{it} \times BI_{it})$		0.018 (0.29)	
$(ECASH_{it} \times CEOD_{it})$		0.005 (0.11)	
$(ECASH_{it} \times INS_{it})$			-0.128* (-1.79)
LEV_{it}	0.537*** (3.82)	0.635*** (4.51)	0.485*** (3.46)
$SIZE_{it}$	-0.040** (-2.20)	-0.051*** (-2.65)	-0.036** (-1.97)
DIV_{it}	13.740*** (25.50)	13.606*** (24.85)	13.55** (25.34)
R^2	0.413	0.429	0.426
Adj. R^2	0.410	0.423	0.422
F-Statistic	165.5	70.35	116.2
Prob. (F –Statistic)	0.000	0.000	0.000

***,**,* Significant at 1%, 5%, and 10% level respectively
(t-statistic given in parenthesis)

5. Discussion on Empirical Results

Empirical results presented in Table 4 indicate that excess cash is negatively related to firm value. The negative relationship may be because of three reasons. First, corporate managers are conservative and prefer to hold more cash for transactional as well as safety motives due to uneven economic condition in the country. Moreover, holding more than optimal level of cash motivates the managers to invest it at below the cost of capital or waste it on organizational inefficiencies. Second, due to underdeveloped capital market in the country managers may not able to find highly liquid securities to earn a positive return on temporarily idle cash. Third, indigent corporate governance (i.e. improper monitoring) may encourage the managers to waste cash in ways that significantly reduce the corporate performance. Combined effects of excess cash and board size are significant and negatively related to firm value. The negative relationship between board size and firm value is congruent with earlier empirical studies which suggest that smaller boards are more effective than bigger boards because bigger boards may become the cause of delays in decision making which in turn

negatively influence the performance. The negative relationship of board size on firm value is consistent with the findings of Yermack (1996), Eisenberg et al. (1998), Mak and Kusnadi (2005), Mashayekhi and Bazaz (2008), Ksunadi (2011), Kumar and Singh (2013). Finally, combined effects of excess cash and insider ownership are significant and negatively related to firm value. The negative relationship may be due to the reason that ownership concentration makes the managers more conservative and in turn confine them to hold more cash than required to support the operations. Thus increase in opportunity cost due to holding more than optimal level of cash may be an important reason for negative affect of excess cash on firm value.

Leverage is positively related to firm value. The positive relationship confirm Modigliani and Miller's (1963) proposition suggesting that managers should use maximum debt in their capital structure due to tax deductible interest payment which in turn reduce the effective cost of debt and increase the firm value. Moreover, the positive relationship between leverage and firm value is consistent with Jensen's predictions (1986) suggesting that debt can be an effective device to mitigate the free cash problem between managers and shareholders. Thus reduction in agency problem creates a positive impact on firm value. Dividends are positively related to firm value. The positive relationship is congruent with the prophecy of bird-in-the-hand theory suggesting that distribution of dividends increase the market price of shares and reduces the cost of equity. Firm size is negatively related to firm value. The negative relationship may be due to the reasons that sample firms may not able to take the benefits of scale economies due to their size which in turn negatively affect the performance. In summary, findings of this study indicate that excess cash and internal governance measures have material effects on firm value.

6. Conclusions

The purpose of this paper is to investigate whether excess cash, board attributes and insider ownership affect the value of the firm. Empirical results indicate that excess cash is negatively related to firm value. The negative relationship may be due to conservative financing policy adopted by the managers due to uneven economic condition in the country. However, holding more than optimal level of cash motivates the managers to invest it at below the cost of capital or waste it on organizational inefficiencies which in turn negatively affect the corporate performance. In addition, weak corporate governance in the country may encourage the managers to waste cash in ways that significantly reduce the performance. Excess cash along with board size is significant and negatively related to firm value. The negative relationship between board size and firm value is congruent with earlier empirical studies suggesting that smaller boards are more effective than bigger boards. Excess cash along with insider ownership is significant and negatively related to firm value. The negative relationship may be due to the reason that ownership concentration makes the managers more conservative and in turn they may hold more cash than required to support the operations. Thus high opportunity cost may be an important reason for negative impact of excess cash on firm value. Leverage is positively related to firm value. The positive relationship confirm the predictions of Modigliani and Miller (1963) suggesting that managers should use maximum debt in their capital structure due to tax deductible interest payment. Moreover, the positive relationship is consistent with Jensen's predictions (1986) suggesting that debt can be an effective tool to mitigate the agency problems between managers and shareholders. Thus reduction in agency problems may positively affect the firm value. Dividends are positively related to firm value. The positive relationship is consistent with the bird-in-the-hand theory suggesting that distribution of dividends increase the value of the firm. Firm size is negatively related to firm value. The negative relationship may be due to the reasons that

small firms in the country may not able to enjoy the benefits of scale economies which in turn negatively affects the performance.

In summary, findings of this study indicate that excess cash and internal governance indicators are important predictors of firm value. Moreover, findings of this study have laid some groundwork upon which a more detailed evaluation of cash along with other attributes of corporate governance on firm value could be based. We believe that findings of this study surely provide support to the corporate managers in determining the cash levels that increase the firm value. Moreover, findings of this study provide support to regulatory authorities to formulate regulations that improve the level of corporate governance in the country.

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