DOES CORPORATE GOVERNANCE MATTER IN DETERMINANTS AND USE OF CASH: EVIDENCE FROM INDIA

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Abstract

Our study investigates the determinants and use of cash holdings by Indian companies. Using a large sample of manufacturing firms that are publicly traded on Bombay Stock exchange for the period of 1998-2012, we present a dynamic panel data regression framework to accommodate the persistence in cash holdings which is typically ignored in the literature. We find significance evidence of persistence in corporate cash holdings of Indian firms. Using this framework, we predict the excess cash holdings and find that firms with higher concentration of insider ownership as well as higher divergence between cash flow and control rights of insiders hold positive excess cash. Not only they hold excess cash but they accumulate cash holdings. The study also finds that business groups on average hold higher cash reserves but at the same time, dissipate cash over time quickly then their standalone counterparts. Further, we find that positive excess cash positively affects dividend payout and propensity to acquisitions. However the study finds that corporate governance plays no role in disbursement of excess cash as dividends or undertaking acquisitions. This indicates absence of agency motive in explaining the dividend payout and propensity of firms to acquire.

ACKNOWLEDGEMENT

INTRODUCTION

The paper investigates the cash holding behaviours of firms in an emerging economy, India. Specifically, the paper attempts to answer the following questions. First, do the Indian firms hold sub-optimal levels of cash, and if yes, how does it compare with their counterparts in developed countries as well as in other emerging markets. Second, does the corporate governance structure of these firms influence their excess cash holding behaviours? Third, to what extent the Indian firms build up excess cash as compared to disbursing it through various channels such as dividends, acquisitions and capital expenditure. Finally, whether such dispensation of cash is influenced by their corporate governance structures?

Corporate financing policies, and the role of cash holdings have been a long standing puzzle for researchers.[1] Traditionally studies that ask the question, why firms hold cash are built on Keynes' thesis of transaction cost and the precautionary motives for holding liquid assets. It is argued that firms hold large cash reserves either to meet unexpected contingencies, or to take advantage of profitable future investment opportunities, especially when external finance is seen to be costly.[2]

To decide the extent of cash holdings Opler *et. al.* (1999) show that companies make a trade-off between costs and benefits by equating the marginal costs of holding liquid assets to the marginal benefits of holding these assets. However, by bringing concepts of asymmetry of

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[1] Opler *et. al.* (1999), Bates Kahle and Stulz (2009), Acharya *et. al.* (2011) to name a few.

[2] In India too, attention is being drawn to the large cash holdings by corporates. Media reports claim that 23 of 41 companies in the Nifty-50 index which is a portfolio of most liquid companies in India, excluding banks and financial services firms, have seen a rise in cash holdings in the past year. 45 out of 85 companies in the Bombay Stock Exchange 100 index, excluding banks, have added to their cash balance sheet. Forbes (June 24, 2012). The reasons for the secular rise in cash holdings have remained unknown.

information, Opler *et. al.* (1999) further argues that the amount of cash held by a company is an outcome of its investment and financing decisions (Opler *et. al.* (1999)).

Recently, trade-off framework has been adapted to also suggest that the motivation for holding cash or cash-equivalents can be viewed as an agency problem. Studies highlighting the agency theory predict that entrenched managers accumulate cash with an intention to expropriate private benefits. For example, Jensen's free cash flow hypothesis (1986) states that free cash makes it easier for managers to pursue risky projects. It also reduces their dependence on external funds and they are not subject to the discipline of capital markets.

Moreover, the recent research emphasises that the quality of investors' rights can accentuate the agency motive to hold cash. As suggested by Pinkowitz, Stulz and Williamson (2003) the firms in countries with poor investor protection rights may hold large cash in general, particularly the firms with concentrated ownership structure. In such countries, the value of corporate cash holdings could be less because of the greater ability of controlling shareholders to extract private benefits from cash holdings. Pinkowitz, Stulz and Williamson (2003) also substantiate that the relation between cash holdings and firm value is much weaker in countries with poor investor protection than in other countries. In a parallel study, Dittmar, Smith and Servaes (2003) find that corporations in countries where shareholding rights are not well protected hold up to twice as much as cash as corporations in countries with good shareholder protection. They conjecture that investors in countries with poor shareholder protection cannot force managers to disgorge excessive cash balances and conventional drivers of cash holdings such as investment opportunities and information asymmetry are less important. In addition, the authors also find in a related firm-level study (Dittmar and Smith, 2011), that good governance approximately doubles the value of cash and governance has a significant

impact on how firms use cash. They show that firms with poor corporate governance dissipate cash quickly that significantly reduces the operating performance. In contrast, however, this negative impact of large cash holdings on future operating performance disappears if the firm is well governed (Dittmar and Smith, 2011).

In contrast to the existing studies that find support for the agency motive of holding cash in general, more recent research finds that the precautionary motive for cash holdings plays an important role in explaining the increase in cash ratios of US corporations between 1986-2006 while there is no consistent evidence that agency conflicts contribute to the increase (Bates *et. al.* (2009)). In a more recent study, Pinkowitz, Stulz and Willamson (2012), while studying the significant increase in cash holdings by US firms, find the increase is driven by the multinational firms which are holding large cash to support R and D activities overseas. The authors do not find evidence for agency motive.

Absence of agency motive is explored by Mikkelson and Partch (2003) in a study of US firms which persistently hold large cash reserves over a five year period. Using a matched sample based on size and industry, the authors find that corporate governance mechanisms such as insider ownership and board structure do not explain the differences between firms with large cash reserves to that with lower cash holdings. The study concludes that financing policies play a role instead. This is in contrast to what is being found in UK firms, where Iona, Leonida and Ozkan (2004) find that ownership concentration and board composition are important determinants of the likelihood of firms adopting conservative financial policies of low leverage and large cash reserves.

While some of these studies take into account the dynamic nature of cash holdings while modelling, they do not explicitly focus on optimum cash holdings and use of excess cash if present. Moreover, the question of optimum cash holding becomes even more complex in the

context of an emerging economy dominated by presence of large number of family owned firms coupled with poor investor protection rights and lack of effective corporate governance framework.

Large business groups mainly exist in these economies to the benefit of the typically small number of investors that control a group leading to the expropriation of minority shareholders. So, the complicated ownership structures of business groups may lead to more severe agency problems (Bertrand *et. al.* (2002)). On the other hand, these firms often have access to their internal capital market which acts as an additional source of funds and hence reduces the importance of holding excess cash (Lensink *et. al.,* 2003).

Given the ambiguous predictions for the cash holdings by firms across studies, the determinants of cash holdings in a context of emerging markets still remains an empirical issue. Our study makes two important contributions. First, the study makes an attempt to shed lights on the cash holding behaviour of firms in the context of one of the largest emerging markets – India. Indian case study provides us a natural opportunity to explore all the complexities of cash holding behaviour and management due to its unique institutional and corporate features which allows us the take into account all the stance of the existing literature on cash holding puzzle – weaker shareholder rights, concentrated ownership structure and presence of large number of group affiliates.

Specifically, it is important to note that many of these theories developed in the context of advanced economies with matured capital markets and property rights might not hold true for many of the emerging markets including India. For example, corporate structure of Indian firms has certain distinguishing features that separate them from their counterparts in developed economies: First, Indian corporate sector is largely governed by family firms with concentrated ownership structure

in the hands of controlling families (Sarkar and Sarkar, 2008). This might decrease the outside control in management decisions and consequently influence their holding of quantum of cash. Second, Indian firms obtain most of their financing from internal and alternative (external) sources which are mainly nonbank and nonmarket (Allen *et. al.,* 2012). Availability of other financing opportunities itself may reduce the important of cash holding of Indian firms. Indeed, business groups in India substitute for internal capital markets by facilitating the transfer of cash and re-distribution of profits across group firms (Gopalan *et. al.,* 2007).

To this end, we explore the relationship between the cash holding and firm-level corporate governance structures by deploying various proxies that capture type II agency problem. These proxies are built on the divergence between cash flow and control rights which is more realistic approach in emerging countries due to lack of single indicator using a check box approach.

Second, apart from its contribution into the sparse evidence of cash holdings in emerging markets the study also contributes in terms of its uniqueness of the methodology to find optimal cash holdings. While identifying the determinants of optimum cash flows, most of the research has ignored the persistency in the cash holdings.[3] Therefore, we explicitly take into account the persistence in cash holdings and estimate a dynamic panel data model to predict the optimum cash holdings.

There exist astonishingly limited studies on Indian corporate sector where predominance of cash rich family business groups is a norm. One direct evidence on cash holdings is by Bhat and Bachhawat (2005) who conduct a cross sectional analysis of cash holdings of large

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[3] While persistency was observed in most of the developed countries studies, it was not directly taken into account econometric methodology. For example, Mikkelson and Partch (2003), Almeida et. al. (2011) explore the persistency using data on US firms.

manufacturing companies. The authors find that firms with larger number of block holders hold less cash on average. The authors do not use the time effects of cash holdings. In addition, the distinction between controlling and non-controlling block ownership is not being made which is very important to understand the type II agency problem which is prevalent in Indian business groups. In another study Bhaduri and Kanti (2008) report effects of firm level and macroeconomic uncertainty on increase in firm level cash holdings of selected Indian firms using a dynamic framework of determinants of cash holdings. They, however, do not explore excess cash holdings and its disbursement of excess cash.

What has been left unexplored, and is important given the features of the Indian market, and firm level corporate governance features, is the large cash reserve holding in the presence of internal capital markets and alternative non-market sources that facilitate internal financing.[4]

While, in contrast the accumulation of cash by such firms can be thought from the public choice perspective that such business groups also engage in rent-seeking behaviour thereby capturing rents created by governments (Majumdar and Sen, 2006).

The main findings of the study are as follows. The firms with higher divergence between cash flow and control rights hold significantly higher cash. Not only they hold higher cash but they accumulate cash holdings. We also find that business groups on average hold higher cash reserves but at the same time, dissipate cash over time quickly then their standalone counterparts.

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[4] Internal capital market and large cash holding has been studied with respect to the diversified firms in developed markets (e.g.Tong (2011)) . Business groups on one hand are similar to such conglomerates, on the other hand, differ from these in terms of ownership structure through cross holdings. One study that explores link between bank financing and cash holding is by Pinkowitz *et. al.* (2001) that suggests presence of large bank ownership is associated with large cash holdings in Japanese Keiretsus.

The paper is organised as follows. Section 2 develops the empirical framework that is used in the paper. Section 3 describes the sample and defines the variables. Section 4 presents our empirical results and interpretations. Finally, Section 5 concludes.

EMPIRICAL FRAMEWORK

Our empirical framework involves three distinct steps to analyse the cash holding behaviour of Indian firms. First, following Opler *et. al.* (1999), we develop a model to estimate the optimal cash holding based on the firm specific determinants provided in the literature. In addition, we also recast the model in a dynamic framework in order to incorporate the persistency in the cash holdings as often quoted in the literature.

Specifically we define our model for determinants of cash holdings by incorporating the persistency along with other conventional determinants of cash holdings as follows:

$$cash\_ratio_{it} = \sum_{j=1}^{p} \alpha_j cash\_ratio_{i,t-j} + x_{it}\beta_1 + w_{it}\beta_2 + v_i + \varepsilon_{it} \qquad (1)$$

where x_{it} is a vector of exogenous variables suggested in the theory such as dividend pay-out, investment opportunities, size, leverage, net working capital and profitability. The model also includes firm specific fixed effects and time dummies.

As our specification involves lagged dependent variable, we estimate the equation using dynamic panel model based on Blundell and Bond (1998) systems of equations.

Next, we compute the consequent excess cash holding defined in the step1 as the deviation between the actual cash holding and predicted cash holding from equation 1. We then explore the variation in the probability of holding excess cash across firms using proxies to reflect corporate governance structures along with other conventional firm specific attributes. Equation 2, defines the panel Logit model with random effects to determine the event of excess cash holding.

$$D_{excess\_cash_{it}} = \alpha_i + \delta_t + \beta_1 corpgov_{it} + \beta_2 Z_{it} + \varepsilon_{it} \tag{2}$$

Where, D_{excess_cash} is a dummy variable that equals 1 if the excess cash holding is positive and zero otherwise where excess cash is defined as the deviation between the actual cash holding and predicted cash holding from the dynamic panel model (Equation 1). Corpgov is a set of the corporate governance variables that are suggested in the literature and defined in the next section. Z is the set of firm specific control variables such as size, age, dividend etc. The model includes firm and time fixed effects.

As we have highlighted earlier, weak corporate governance often accentuates the agency problem related to cash holding. In step 2, we therefore explore to what extent the sample firms build up excess cash as compared to disbursing it. We adopt a framework presented by Dittmar *et. al.* 2011 to specify the variation in the excess cash holding in terms of accumulation or dissipation of the excess cash as specified in equation 3.

$$\Delta excess\_cash_i = \alpha + \beta own\_structure_i + \varepsilon_i \tag{3}$$

Where *Δexcess_cash* is the change in excess cash holding between two subsequent periods i.e. t and t+1. We define accumulation of excess cash if the change is negative and dissipation if the change in

excess cash is positive. We run separate regressions for a sample of firms which accumulate and dissipate. *Own_structure* is measured as ownership structure in hands of promoters, foreign investors and institutional investors. Since equation 3 is defined with respect to the change in the excess cash, we use simple OLS to estimate the parameters of the model.

Our main variable of interest is promoter ownership as this determines the extent of entrenchment in the emerging markets due to concentration of control in the hands of controlling owners.

Finally, we explore the effects of excess cash in previous year on the disbursement through dividend payment and acquisitions. A set of equations are specified below. The dependent variables are lag of excess cash and positive (Pos_Excess_cash) and negative excess cash (Neg_Excess_cash) respectively.

$$D_{dissipation_{it}} = \alpha_i + \delta_t + \beta_0 Excess\_cash_{i(t-1)} + \beta_1 Z_{it} + \varepsilon_{it} \qquad (4)$$

$$D_{dissipation_{it}} = \alpha_i + \delta_t + \beta_0 Pos\_Excess\_cash_{i(t-1)} +$$
$$\beta_1 Neg\_Excess\_cash_{i(t-1)} + \beta_2 Z_{it} + \varepsilon_{it} \qquad (5)$$

$D_{dissipation}$ is measured as dividend payout and a dummy variable for acquisition respectively. A set of fixed effects and random effect Logit models are developed to explore the aforementioned options to disburse cash. The next section describes main and control variables used in the models along with the sample selection.

DATA AND SAMPLE SELECTION

To investigate our research questions highlighted in the first section, we construct a sample of manufacturing firms listed on the Bombay Stock Exchange.[5] The sample includes survivors and non-survivors that appeared on Prowess any time in the sample period of 1999-2012. Further, following the literature we have excluded the financial firms and utilities from our initial sample. As a consistency check we also exclude firms with non-positive sales and/or assets and not having at least four consecutive years of reported sales during the sample period.

After excluding the firms from above mentioned criterion we obtain an unbalanced panel of 1748 firms with 28,710 firm-years of observations.

However, for empirical estimates exploring the relationship between excess cash and corporate governance structure, we use the sample period of 2001 onwards. Year 2001 is when the code for corporate governance became effective through Clause 35 of the listing agreement. Therefore, detailed and consistent information on ownership structure is available from 2001.

The following sub section defines main and control variables that are used in the analysis.

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[5] Prowess is maintained by the Centre for Monitoring Indian Economy (CMIE) and provides the largest coverage of both public and unlisted companies. Companies listed on BSE that are available from Prowess comprise of nearly 85 percent of total market capitalisation of BSE.
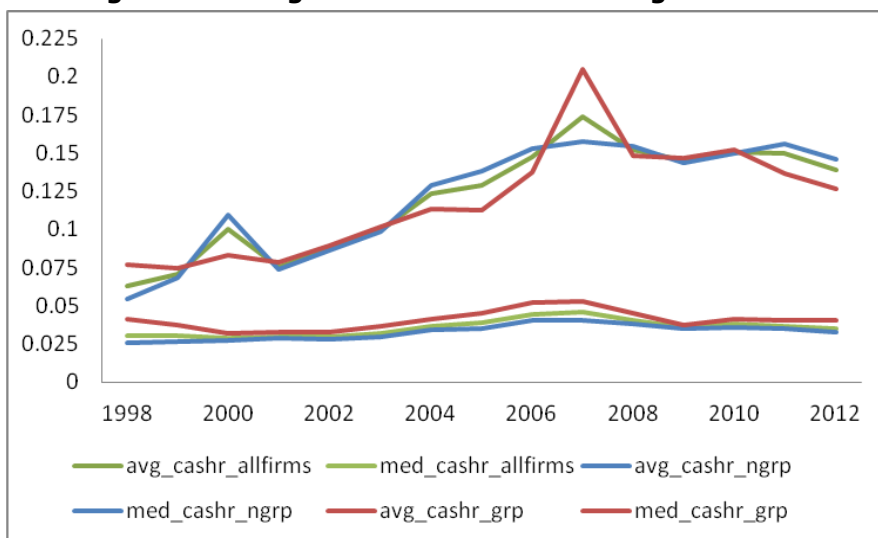
Measure and Determinants of Cash Holdings

Following the literature we have used the following variables to determine the optimum cash holding – size, leverage, market to book value, dividend payout, capital expenditure, R and D expenditure, age, profitability and net working capital.

Our main variable of interest is cash ratio which is computed as the ratio of cash balance to total assets net of cash balance. Following Opler *et. al.* (1999) we define firm's cash balance as cash and bank balance plus marketable securities. Our dependent variable CASH_RATIO is then defined as the natural log of ratio of cash balance to total assets minus cash balance.

Figure 1 shows the average and median[6] cash ratio for all sample firms as well as for both group and standalone firms in the sample for the sample period. Top chart plots the average cash ratio and bottom chart plots the median cash ratio. In general, we observe that group affiliated firms hold larger cash ratio compared to their standalone counterparts. We also observe a significant variation in year-on-year change in cash holding for group firms as compared to standalone which tend to hold stable cash holding pattern. We observe sudden increases in average cash ratio in years 2000 and 2007 respectively. Where in 2000, this increase was driven by standalone firms, in 2007 this increase was observed mainly in business group firms. Year 2000 was the year of Dot Com scam and 2007 was beginning of the global financial crisis in the USA which would have led the group firms to accumulate cash as a precautionary motive.

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[6] Large number of firms in our sample have zero cash balance reported during the sample period and therefore we also use median to indicate the distribution of our sample.

Figure 1: Average and Median Cash Holdings of Firms

Next we define each of the explanatory variables that are used in the empirical analysis.

Existing literature on cash holdings finds that the market-to-book ratio as an important determinant of corporate financing choices. Cash holdings depend on the likelihood that a firm will have a positive net present value projects in the future which in turn depends on the firm's portfolio of growth options (see, Smith and Watts, 1992; Jung *et. al.*, 1996; Barclay and Smith, 1995). Since the book value of assets does not include future growth options, the ratio of the market value of the firm, relative to the book value (MBVR), is being used. Higher value of MBVR indicates that a firm has a high preponderance of growth options (Opler *et. al.,* 1999) and hence could be a better proxy for future growth opportunities of a firm. MBVR is expected to be positively related to cash holdings.

Firm size (SIZE) is defined as the natural logarithm of the book value of assets. Since large companies are likely to be less constrained and can easily adjust their debt levels, they hold lesser cash. Large companies would also have better access to capital markets and trade credits which further reduces the need for holding cash. Therefore, SIZE is expected to be negatively related to cash holdings.

Leverage (LVRG) is calculated as the debt-to-assets ratio defined as total debt/book value of assets. Managers who have access to excess cash will not increase leverage voluntarily to avoid monitoring by debt-holders (Jensen (1986); Harris and Raviv (1990)). What follows is that higher leverage constrains managers towards risk of bankruptcy and therefore reduces their incentives of holding excess cash. LVRG is then expected to be negatively associated with cash holdings. In contrast, the hedging argument of Acharya, Almeida, and Campello (2007) that financially constrained firms will use excess cash flows to reduce current debt if their hedging needs are low predicts a positive relation between leverage and cash holdings.

Following the existing literature, we also include proxy variables for net working capital, capital expenditure and Research and Development expense as ratio of net assets. These variables follow from the static tradeoff theory and financial policies theory highlighted by Opler *et. al.* (1999).

Net working capital (NWCTA) is a measure for liquid asset substitutes and is expected to be negatively related to the cash holdings.

To distinguish the effects of a firm's dividend payouts (PAYOUTDUM) on cash holdings, we define a dummy set equal to one in years where a firm pays a dividend, otherwise set equal to zero (PAYOUT). We also check robustness of our results by including dividend payout in Rs. Crore. Firms that pay dividends are likely to be less risky

and have greater access to capital markets, so the precautionary motive for cash holdings is weaker for them. Jensen's (1986) free cash flow theory suggests that non-dividend payers with poor growth opportunities will accumulate more cash. Also, firms might hold larger cash reserves to lower costs of raising funds because of the possibility to reduce dividend payments. Along this line of argument, many papers consider non-dividend paying firms to be financially constrained (for instance, Almeida, Campello, and Weisbach (2004)), suggesting that the increase in cash holdings occurred in financially constrained US firms.

Cash levels should be determined by the levels of investment. To account for the investment we include research and development expenses (RND) and capital expenditure spending (CAPEX). RND is measured as the ratio of R and D expenditure to net assets and CAPEX is measured as the ratio of capital expenditures to net assets respectively. Prediction of these investment expenditure measures differ between the two theories of cash holdings as follows. The tradeoff theory predicts a positive relationship between investment (in capital expenditures and R and D) and cash levels, while the financial hierarchy view predicts a negative sign with respect to CAPEX and RND. RND also measures growth opportunities. Firms with greater R and D are assumed to have greater costs of financial distress. R and D expenditures consume cash, but R and D's role as a proxy for growth opportunities and financial distress could lead to a positive relation between the cash ratio and R and D spending (Bates *et. al.,* 2009). If capital expenditure create physical assets that can be used as collateral, this would increase the debt capacity of a firm and therefore reduce the precautionary demand for cash. Further, as shown by Riddick and Whited (2009), a productivity shock that increases investment can lead firms to temporarily invest more and save less cash, which would lead to a lower level of cash. At the same time, capital expenditures similar to R and D could also proxy for financial distress costs and/or investment opportunities, in which case they would be positively related to cash (Bates *et. al.,* 2009).

We also include group membership dummy (GRPDUM) which is set equal to 1 if the firm is affiliated to a business group. Firms belonging to business groups can use internal capital market benefits and receive better access to financial resources relative to stand-alone firms (Deloof, 1998; Lensink *et. al.*, 2003) and therefore have lesser need to hold large cash reverses compared to their standalone counterparts.

Next, we include a measure of profitability (CFLOW). The financial hierarchy model of cash holdings (Opler *et. al.* (1999); Dittmar *et. al.* (2003)) suggests that the cash balance of a company is the outcome of its profitability and investment needs. Since investment opportunities are likely to be better in profitable companies, the need for holding cash increases. Hence, positive sign is expected between profitability and cash holding.

Table 1 shows the description of the variables used in the determinants of cash holdings.

Table1: Description of Variables

The table provides the description of the variables used to model the cash holding and compute excess cash holdings.

Variable	Description
Net assets	Total assets minus (cash+bank balance+marketable securities)
CASH_RATIO	Cash+bank balance + marketable securities divided by total assets minus denominator
SIZE	Natural log of total assets
CAPEX	Capital expenditure divided by net assets
LVRG	Total borrowings divided by net assets
AGE	Incorporation year minus current year
CFLOW	PBDITA/Net assets
RND	R and D expenditure/Net assets
NWCTA	Net working capital / Net assets
GRPDUM	Dummy variable = 1 if firm belongs to business group; 0 otherwise
PAYOUT	Dividend paid in the financial year
MBVR	Market capitalisation divided by book value of assets
DIVDUM	Dummy variable = 1 if firm has paid dividend for that financial year; 0 otherwise

Table 2 presents the descriptive statistics of the above variables. The average cash ratio in our study during the period of 1999-2013 is about 12 percent. This is significantly lower than that held by an average firm in the US (22 percent) during 1990 to 2003 as reported in Dittmar , Smith and Servaes (2011). In contrast to Dittmar, Smith and Servaes (2011), more recently as reported in Harford *et. al.* (2013) an average US firm between 1985 and 2009 hold about 8.5 percent of net assets in cash. In another study, Pinkowitz, Stulz and Williamson (2012) reports average cash ratio of US firms between 1998-2000 is about 17 percent

which has increased to 21 percent between 2004-2006 and remained at those levels by 2010. In our sample, cash ratio increased to comparable levels of 20 percent for group firms in 2007. In the same year, standalone firms' cash ratio increased to 16 percent. Further, cash holding by an average Indian firm between 1998-2012 in our sample is less than that reported by Kusnadi (2011) for an average Singaporean and Malaysian firm of about 17 percent cash during 2000-2005. In addition, the average firm in our sample has a leverage of 29 percent and an average cash flow of 15 percent. An average firm spends 6 percent on capital expenditure and 0.3 percent on research and development. 52 percent of our sample firms pay dividend with an average dividend payout of 1 percent of net assets. 35 percent of our sample firms are affiliated to business groups with an average Market to book value of 1.85.

Table2: Summary Statistics

The table describes the descriptive statistics of the variables used in the determinants of cash holdings. The variables are defined as per Table1.

Variable	Mean	25th Percentile	Median	75th Percentile	N
CASH_RATIO	0.12	0.01	0.03	0.10	28170
SIZE	6.89	5.49	6.80	8.16	28170
CAPEX	0.06	0.005	0.034	0.092	28170
LVRG	0.29	0.12	0.28	0.43	28170
AGE	25.65	13	20	31	28170
CFLOW	0.15	0.08	0.13	0.18	28170
RND	0.003	0	0	0.0004	28170
NWCTA	0.27	0.122	0.253	0.385	28170
DIVDUM	0.52	0	1	1	28170
PAYOUT	0.01	0	0.002	0.017	28170
GRPDUM	0.35	0	0	1	28170
MBVR	1.80	0.42	0.83	1.73	28170

For the second part of our empirical exercise we focus on the corporate governance variables that are defined as follows.

Measures of Corporate Governance

As we mentioned earlier, the corporate structure in India is dominated by family owned firms which are also part of large business groups. To proxy for such an ownership structure, we already defined group dummy (GRPDUM) that equals one if firm belongs to a business group and zero otherwise. This feature of corporate governance structure is used in the determinants of cash holdings following the financial constraint hypothesis.

In addition to group affiliation, we also control for the extent of insider ownership captured by promoter shares as proportion of total shareholding (PROMSH). Disclosure Clause 31 of Takeover Act in India specifies Promoters as parties in control of the management. This variable therefore captures the incentives of controlling promoters that aligns their interest with the outsiders by virtue of their control rights. Studies focusing on firm performance corroborate the empirical effect of promoter ownership as a trade-off between incentive-hypothesis and expropriation-hypothesis. Incentive-hypothesis captures the elimination of Type I agency promoter (between owner-manager) which predicts that with increased ownership concentration firm value will increase. The expropriation-hypothesis captures the incentives of controlling owners to extract private benefits at cost of outside investors (type II agency problem) which leads to decrease in firm value (Morck, 1999). With respect to the cash holdings, Kusnadi (2011) finds effect of insider ownership is negative but only marginally significant. On the other hand, he also finds that squared insider ownership exhibits a strong positive association with cash holdings. We also consider squared promoter ownership (PROMSQ) to allow for the non-linear effects of control rights by promoters. This non-linear relationship is also observed with respect to the firm performance corroborating the switch over from incentive effects to expropriation effects (Sarkar and Sarkar (2000), Selarka (2005)).

Next, we construct a variable wedge that captures the divergence between cash flow and control rights of controlling promoters (WEDGE). Since promoters are by definition in control of the management the extent of promoter shareholding will capture the extent of alignment of interest with outside investors. Through cross holdings[7] business groups diversity their controlling stakes and the divergence between control rights and cash flow rights captures the incentives for promoters to extract private benefits of control (Faccio *et. al.,* 2002). We define cash flow rights as sum of all the shareholdings by promoters which is greater than 1 percent and control rights as the promoter shareholding as above. WEDGE is then defined as the difference between the promoter shareholding and cash flow rights of these promoters. This variable also captures the opacity in the disclosure of insider ownership and therefore captures the extent of crossholdings (Sarkar and Sarkar, 2008). Similar to PROMSQ we square the WEDGE (WEDGESQ) to account for any non-linear effects. Larger WEDGE means larger difference between control and cash flow rights which further can be associated with higher incentives of controlling owners to expropriate and vice a versa.

Finally, we include the extent of outside blocks in terms of institutional investors' ownership (IINVSH). These investors may limit or encourage the holding of excess cash. For example, Pinkowitz and Williamson (2001) conclude that strong ownership by Japanese banks persuade firms to hold large cash balances which is reduced when the bank power weakened in general. With respect to Indian corporate structure, we control for institutional investors' ownership which includes mutual funds, banks and financial institutions. These investors serve as outside control and external governance measure. From the corporate

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[7] Cross shareholding is a typical corporate ownership structure in business groups where other firms affiliated to the same business group retain control through ownership stakes. This reduces the concentration in hands of individuals.

governance perspective, institutional investor ownership acts as external mechanism to control promoters' incentives to extract private benefits.

We include corporate governance variables to study the impact of same on excess cash holdings as well as on accumulation (dissipation) of cash holdings from one period to next. Existing evidence is mixed in nature. This line of argument follows from agency theory. Initial evidence by Stulze, Pinkowitz and Williamson (Specifically, Dittmar *et. al.* (2011)) investigate how corporate governance impacts firm value by examining both the value and the use of cash holdings in poorly and well governed firms. The authors find that good governance approximately doubles the value of cash. Furthermore, governance has a significant impact on how firms use cash. We show that firms with poor corporate governance dissipate cash quickly and in ways that significantly reduce operating performance. This negative impact of large cash holdings on future operating performance is cancelled out if the firm is well governed. With respect the 45 countries Dittmar *et. al.* (2003) find that corporations in countries where shareholders rights are not well protected hold upto twice as much as cash as corporations in countries with good shareholder rights. In addition, they find when shareholder protection rights are poor, conventional determinants of cash such as investment opportunities and asymmetric information becomes less relevant even after controlling for capital market development. This is consistent with the agency cost view that investors in the weaker shareholder rights countries cannot force managers to utilize excess cash holdings.

Table 3 shows the summary statistics of corporate governance variables used in the second part of analysis on excess cash holdings. On an average our sample firm is significantly concentrated in the hands of controlling owners when compared with widely used definition of 20 percent threshold (La Porta *et. al.* (1999)).

Table3: Summary Statistics – Corporate Governance

The table presents the descriptive statistics of corporate governance variables used in the analysis. Promoter ownership (PROMSH) is defined as total voting rights held by promoters, WEDGE is defined as the difference between promoters' voting rights and cash flow rights and Institutional investors' ownership (IINVSH) is defined as total voting rights held by institutional investors.

Variable	Mean	25th Percentile	Median	75th Percentile	N
Promoter ownership	45.66	33.13	49.72	62.65	19639
Wedge	0.07	0	0.002	0.04	19639
Institutional investor ownership	6.88	0	1.03	10.08	19639

EMPIRICAL RESULTS

The results of our empirical analyses are presented in three sub sections. First we determine the optimum cash holdings of our sample firm which are presented in Table 4. Table 4 presents the estimates of dynamic panel model of cash holding for the period 1998-2012. The dependent variable is the natural logarithm of cash-to-asset ratio and two lags of cash ratio have been incorporated to control for the persistency in cash holding behaviour of Indian firms. As hypothesized, significant lagged variables validates our conjectures of strong persistency in cash holding of the Indian firms during the sample period. With respect to other control variables, as found in the standard literature, cash holdings increase significantly with firm size, profitability and the R and D expenditure. Further, cash holdings decrease significantly with net working capital, leverage, and capital expenditure which are also consistent with the extant literature (e.g. Bates *et. al.* (2009); Harford *et. al.* (2008)) in addition, group firms hold less cash on average. This is consistent with the internal capital market theory that documents transfer of cash across group firms by means of intragroup loans and are typically

used to support financially weaker firms (Gopalan *et. al.* (2007)). The diagnostics of the model also reveals that our model fits reasonably well to the sample of Indian firms during 1998-2012 as AR2 and Sargan test are insignificant at 1 percent level.

Large firms, firms with high leverage and net working capital, and firms that pay out dividends would be expected to hold proportionately smaller amounts of cash (Opler *et. al.* (1999)). Conversely, firms with better investment opportunities (as measured by MBVR), higher cash flow, and heavier capital expenditures would be expected to hold proportionately larger amounts of cash.

The signs on all, except SIZE are consistent with these predictions and are significant. In particular, cash holdings are found to be positively associated with SIZE, CFLOW and CAPEX, and negatively associated with LVRG and NWC.

With respect to dividend payout or alternatively a dummy variable to capture whether firm pays dividend or not (leads to lower costs of raising funds because of the possibility to reduce dividend payments)and MBVR (measure for investment opportunities and possible underinvestment problem), we do not find any significant effects on cash holdings. This is inconsistent with Opler *et. al.* (1999) which argues the positive effect of dividend payout. On the other hand, as argued by Holder *et. al.* (1998), a low payout ratio itself is a means to increase liquidity. This is because a low payout-ratio signals the intention to keep the business going, strengthens the capital basis of the firm which in turn can signal high-growth opportunities of the firm and at least reduces the risk of financial distress. The trade-off effect of dividend payout is observed in our findings where positive effects of signalling is cancelled out by negative effects of lower financial distress.

The effects of size, R and D-to-assets ratio and capital expenditures-to-assets ratio are not consistent with the financing hierarchy model. Positive relationship between R and D and cash holding is consistent with the argument that R and D as a proxy for growth opportunities and financial distress could lead to a positive relation between the cash ratio and R and D spending (Bates *et. al.* 2009). Similarly if capital expenditures create physical assets that can be used as collateral, this would increase the debt capacity of a firm and therefore reduce the precautionary demand for cash (Riddick and Whited 2009).

Negative and significant coefficient of GRPDUM is consistent with the argument that access to internal capital markets and relatively easy access to bank financing reduces the precautionary demand for cash for such firms.

Table 4: Regressions Predicting Firm Liquidity Levels, 1998-2012

The table shows the results of the dynamic panel data to predict the cash ratio (CASH_RATIO) of sample firms between1998-2012.

Independent Variable	Parameter Coefficient	Pr > z
Constant	-3.7081	0.000
CASH_RATIO (Lag1)	0.3740	0.000
CASH_RATIO (Lag2)	0.0955	0.000
SIZE	0.0993	0.214
CAPEX	-0.1574	0.067
LVRG	-0.9793	0.000
AGE	0.1441	0.001
CFLOW	1.0921	0.000
RND	3.649	0.029
NWCTA	-0.6531	0.000
GRPDUM	-4.2069	0.013
Time effects	Yes	Yes
Firm fixed effects	Yes	Yes
Sargan test for overidentifying restrictions		0.0485
AR 1		0.0000
AR 2		0.3041

The table reports the results of determinants of cash holdings which is further used to compute excess cash holding levels. The estimation is done using GMM method.

In the next section, we use the previous specification to predict the cash-to-asset ratios for each firm in our sample and compute the excess cash holdings to analyze the effect of corporate governance on the likelihood of holding positive excess cash. Figure 2 presents the sample distribution of excess cash holdings. We observe that the distribution of sample firms holding excess cash is close to symmetry with about equal proportion of firms having positive and negative excess cash. Around 18 percent of the sample firms do not hold any excess cash.

Figure 2: Excess Cash Holdings of Firms

The figure shows the distribution of excess cash holdings of sample firms between 1998-2012. Excess cash holding for each firm is computed as the difference between observed cash holding less cash holding predicted from the dynamic panel model.
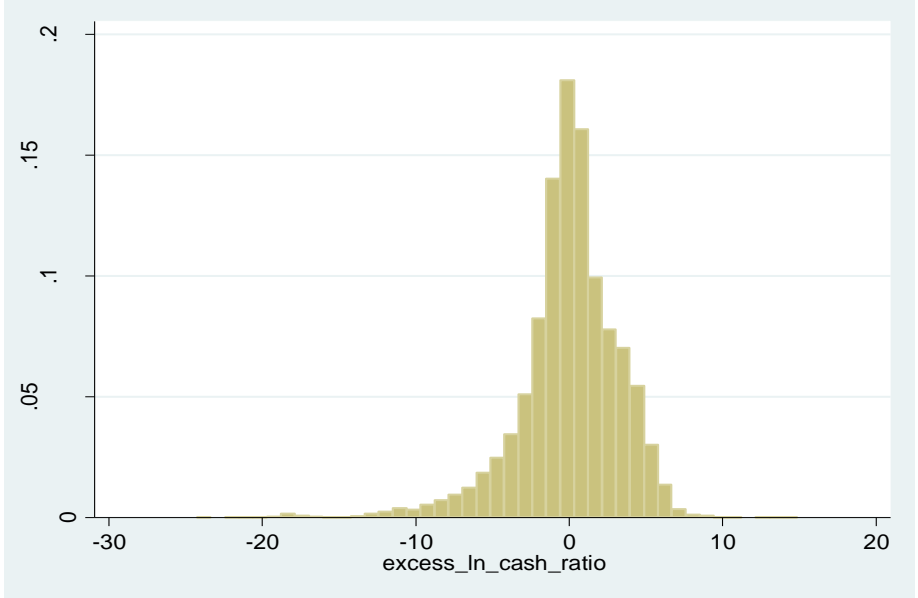
As a part of our preliminary insight we estimate the pair-wise correlations between positive excess cash holding and corporate governance variables such as promoter ownership, institutional investor ownership and wedge. As there is no existence of very high correlation among the governance variables, we can use all of them into our regression analysis. From the univariate correlation analysis we observe that firms with lower wedge, higher institutional ownership and higher promoter ownership are likely to hold positive excess cash.

Table 5: Pair-wise Correlations

The table reports the pair wise correlations between positive excess cash ratio and corporate governance variables for our sample firms between 1998-2012.

	Positive excess Cash-to-asset	WEDGE	IINVSH	PROMSH
Positive excess Cash-to-asset	1.0000			
WEDGE	-0.0251*	1.0000		
IINVSH	0.0409*	-0.0314*	1.0000	
PROMSH	0.0197*	-0.0408*	0.0032	1.0000

Note: * Indicates Significance at 5 Percent Level.

However to check the robustness of our findings based on the correlation we estimate a set of random effects Logit models with an event of positive excess cash as dependent variable.

Table 6 presents the results. Model1 is our basic model with other control variables included for age, size, dividend and growth opportunities in terms of Tobin's Q (QRATIO). Model 2 and 3 include quadratic terms of wedge and promoter ownership to capture non-linear relationship which is found by most of the studies in India (e.g. Sarkar and Sarkar 2000; Selarka 2005). The signs of the variables are expected and they are economically significant as well. Positive and significant coefficient of PROMSH indicates higher stake by controlling owners is likely to increase the excess cash holding. Negative and significant coefficient of WEDGE indicates that firms with less opacity in controlling owners' control and cash flow rights is associated with higher likelihood of firm holding cash in excess of their optimal levels predicted. This further indicates that lower the controlling owners' incentives to expropriate, higher is the cash holding. Interesting result is that even though group firms in general hold less cash, they are likely to hold excess levels of cash. This is interestingly in line with Gopalan *et. al.*

(2007) that group affiliated firms are expected to tunnel cash through intergroup loans.

Higher ownership concentration and less divergence between cash flow and control rights per se cannot be understood as good vs bad governance as this depends upon the levels of controlling owners' stake. To account for this we include the quadratic terms of both PROMSH and WEDGE as PROMSQ and WEDGESQ respectively in Model3. Negative and significant coefficient of PROMSQ indicates an inverted U shape relationship between insider ownership and excess cash holding. This is consistent with the performance effects of ownership concentration found in India (e.g. Sarkar and Sarkar 2001 and Selarka 2005). The higher ownership concentration aligns interest of insiders and outside investors which is further associated with lesser excess cash holding. This can be understood as effect of governance mechanism through ownership concentration. On the other hand, positive and significant coefficient of PROMSH can be understood driven by entrenchment effects at the relatively lower levels of insider ownership which in turn is effect of bad governance structure.

With respect to the control variables, coefficients of SIZE, PAYOUT, QRATIO and LVRG are in line with earlier arguments.

Table6: Excess Cash Holdings and Corporate Governance

The table reports the results of Logit estimation where dependent variable is set equal to 1 if excess cash-to-asset ratio is positive, otherwise set equal to zero.

	Model1		Model2		Model3	
	Coefficient	P value	Coefficient	P value	Coefficient	P value
Constant	0.9079	0.000	1.0117	0.000	0.8272	0.000
PROMSH	0.0028	0.000	0.0028	0.000	.0214	0.000
IINVSH	-0.0038	0.014	-0.0031	0.044	-.0057	0.000
GRPDUM	3.5821	0.000	3.5942	0.000	3.6067	0.000
LVRG	-0.0002	0.651	-0.0002	0.662	-0.0002	0.612
AGE	-0.1089	0.000	-0.1094	0.000	-0.1111	0.000
QRATIO	0.0283	0.000	0.0274	0.000	0.02809	0.000
SIZE	0.1173	0.000	0.1105	0.000	0.1111	0.000
PAYOUT	0.0904	0.000	0.0915	0.002	0.0845	0.004
WEDGE	-0.3206	0.000	-1.5593	0.000	-1.9623	0.000
WEDGESQ			1.2440	0.000	1.6218	0.000
PROMSHSQ					-0.0002	0.000

Next we present the effect of ownership concentration on the accumulation or dissipation of excess cash. Following Dittmar et al (2003) we estimate a simple linear regression model to study if the firms with positive excess cash have a tendency to accumulate or dissipate. Both the motives can be affected by agency motivation of insiders. Table 7 presents the results for the sample where excess cash is positive. Dependent variable is defined as change in excess cash between t and t-1. Positive value of change in excess cash indicates accumulation and negative values indicate dissipation of excess cash. Results indicate that the firms with lower promoter ownership (i.e. cash flow rights) dissipate excess cash whereas firms with higher promoter ownership accumulate cash.

Table 7: Ownership Structure And Accumulation/Dissipation Of Excess Cash Held By Indian Firms For The Smaller Sample With Excess Cash >0

The table reports the OLS regression with dependent variable defined as accumulation/dissipation of cash holding based on changes in cash holdings from t-1 to t and t to t+1 respectively.

	Accumulation		Dissipation	
	Coefficient	P value	Coefficient	P value
PROMSH	-0.0087	0.000	0.0049	0.003
PROMSQ	0.0001	0.002	-0.0001	0.011
IINVSH	0.0017	0.312	-0.0015	0.238
GRPDUM	-0.1197	0.000	0.0255	0.292
FIISH	0.0009	0.439	-0.0005	0.604
Constant	0.9594	0.000	-0.7083	0.000

Use of Excess Cash Holdings

Finally, we checked the disbursement of excess cash through various channels such as dividend payout and acquisitions. Common finding in the literature is that firms with excess cash over the target level predicted by the regression analysis spend only little more on capital expenditures, acquisitions, and payments to shareholders than other firms. In accordance with the financing hierarchy model, firms that accumulate excess cash are firms that do well. For example, Opler *et. al.* (1999) argue "management accumulates excess cash if it has the opportunity to do so". This management behaviour is attributed to the precautionary motive, but at the same time Opler *et. al.* (1999)) acknowledge that there is no evidence of agency costs of managerial discretion. More recently Pinkowitz, Stultz and Willamson (2012) find that US firms with more than 25 percent sales from foreign operations are the ones which hold significantly higher cash to support R and D activities primarily as postulated by Morck and Yeung (1991). The authors also reject agency motives to hold higher cash. Mikkelson and Partch (2003) reach a similar

result link the motivation of holding excess cash due to conservative financial policies.

Table 8 reports the disbursement of excess cash and positive excess cash on dividend payout and acquisitions. Model 1a and Model 2a include dependent variable as excess cash ratio whereas Model1b and Model2b include dependent variable as positive and negative excess cash ratio respectively. For payout decisions, the dependent variables are dividend paid and a dummy that takes a value of 1 for the year of acquisition and thereafter. For the dividend payout, we estimate the model using fixed effects regressions with time effects. We conjecture that it is positive excess cash ratio in the previous period that leads to higher dividend payout and higher likelihood of acquisitions. We find that positive excess cash holding is associated with higher dividend payout after controlling for size, leverage, group affiliation and insider ownership respectively. Group firms pay lower dividends even though in they tend to hold higher excess cash. This is once again consistent with tunnelling out cash to other firms in the same group (e.g. Gopalan *et. al.* (2007)).

With respect to the likelihood of acquisition, similar to dividend payout, it is positive excess cash that determines the likelihood of firm involving into acquisition. With respect to the effect of group affiliation, we find that group firms pays significantly less dividend compared to their standalone counterparts. Also, there is no significant difference between the likelihood of group affiliated firm and standalone firm making an acquisition. This is not surprising as the concentration of ownership is high for both types of firms and not necessarily a differentiating effect when it comes to M&A (Bhaumik and Selarka 2012).

In an unreported exercise, we also tried to check the effect of corporate governance along with the excess cash on the channels through which excess cash is used. Specifically, we include the interaction term between promoter ownership (and wedge) and excess

cash holding. However, we did not find any significant role played by corporate governance to influence these decisions. Our lack of agency view in terms of disbursement of excess cash holding is consistent with Opler *et. al.* (1999) where they find less evidence that excess cash gets wasted through acquisitions**.**

Table 8: Use of Excess Cash in Dividend Payments And Acquisitions

	Dividend Payout		Acquisitions	
	Model1a	Model1b	Model2a	Model2b
L.Excess_cash_ratio	0.0002829 ***		.042054***	
l.neg_excess_ln_cash_ratio		-.0000203		.0145495
l.pos_excess_ln_cash_ratio		.000948***		.0828914***
PROMSH	.0000351***	.0000351***	.0025053	.0024843
LVRG	-.048487***	-.0482069***	-1.654557***	-1.621521***
SIZE	.0036598***	.0036536***	.6432632***	.6402789***
GRPDUM	-.0027611***	-.003851***	.1171136	.0645146
Year dummies	Yes	Yes	Yes	Yes

Notes: This table examines the relation between excess cash holdings and payout decisions. For payout decisions, the dependent variables are dividend paid and a dummy that takes a value of 1 for the year of acquisition and thereafter. For the dividend payout, we estimate the model using fixed effects regressions with time effects. Model1a and Model1b report results from fixed effect regression. For the acquisition decision, we estimate the model using Random-effects ordered logistic regression. Model2a and Model2b report the results. Model1a and Model2a use previous year excess cash holding as our main dependent variable whereas Model1b and Model2b use previous year negative excess cash holding and previous year positive excess cash holding as main dependent variables. Robust standard errors are estimated. Superscripts *, **, *** indicate significance level at the 10 percent, 5 percent and 1 percent levels, respectively

CONCLUSION

The paper investigates the cash holding behaviours of firms in an emerging economy, India. Specifically, the paper attempts to answer the following questions. First, do the Indian firms hold sub-optimal levels of cash, and if yes, how does it compare with their counterparts in developed countries as well as in other emerging markets. Second, does the corporate governance structure of these firms influence their excess cash holding behaviours? Third, to what extent the Indian firms build up excess cash as compared to disbursing it through various channels such as dividends, acquisitions and capital expenditure. Finally, whether such dispensation of cash is influenced by their corporate governance structures?

We employ large data of 28170 firm year observations from Indian manufacturing sector during 1998-2012 where there is a mix of group affiliates and standalone firms. We find strong evidence of persistency in cash holdings and majority of firms hold excess cash. Group ownership predicts positive excess cash holding and also dissipating this cash quickly than their standalone counterparts. We also find positive effect of positive excess cash holding on dividend payout and acquisitions. We do not find effect of corporate governance on disbursement of excess cash. Our lack of agency view in terms of disbursement of excess cash holding is consistent with Opler *et. al.* (1999) where they find less evidence that excess cash gets wasted through acquisitions**.**

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