The South East Asian Journal of Management

Volume 13
Number 1 *April*

Article 2

4-30-2019

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Cash Holding or Net Debt, Which is More Relevant for Indonesian Firms?

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Revised 23 April 2019
Accepted 30 April 2019

Abstract

Research Aims - This paper investigates the firm-level determinants of cash holdings by Indonesian firms. It also examines net debt as substitute measure for cash holding in firms' financial policies.

Design/Methodology/Approach - With the sample comprising 483 Indonesian companies listed on the Indonesia stock exchange, multiple regression analysis is conducted on firms' cash holdings and net debt as dependent variables and firm-level financial and other variables as independent variables.

Research Findings - The study finds that cash holding is the most relevant for financially-constrained firms and for growth firms. Net debt appears to be the most relevant element for low-growth firms. No-hedging firms are indifferent about their cash holdings and net debt.

Theoretical Contribution/Originality - This study establishes the validity of fact that more profitable firms generating sustainable cash flows are likely to hold more cash. Also, firms that face challenges in raising external capital, due to higher cost of capital, tend to accumulate greater cash to use it as internal equity, when required.

Managerial Implications in the Southeast Asian Context - For financially-constrained Indonesian firms, cash holding is central to their cash flows, working capital decisions, capital expenditures planning, capital structure and overall cost of financing. Net debt appears to be most relevant for low-growth firms, followed by growth firms and financially-constrained firms, equally.

Research Limitations and Implications - Since the study uses a diversified sample of firms belonging to different industries, it does not capture any industry impact on cash holdings.

Keywords - Cash Holdings, Indonesia, Leverage, Net Working Capital, Financially-constrained firms, Growth Firms

INTRODUCTION

Firms hold cash primarily for three reasons, namely, operations or transactions, precautionary measures and future investment requirements. Many firms hold very large cash balances as a per cent of their total assets. Specifically, firms operating in a weak institutional system tend to hold more cash than their counterparts in more mature and developed financial systems.

The trade-off theory suggests that there is an optimal level of cash holding for every firm; this optimal level is achieved by holding cash at a level in a way that the marginal benefit of cash holdings equals the marginal cost of those holdings (Miller & Orr, 1966). Of course, the optimal cash holding levels likely to be different for different firms, because cash requirements depend heavily on the nature of a firm's business and industry. Firms that operate in cash-oriented businesses, such as banking, financial services and retail industries, will require more cash for operations than other firms operating in credit-oriented business, such as automobile manufacturing and construction.

The South East Asian Journal of Management
Vol. 13 No. 1, 2019
pp. 18-36

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The cost of holding liquid assets includes a lower rate of return of these assets because of liquidity premium and tax disadvantages. There are two main benefits for holding liquid assets. First, a firm saves transaction costs to raise funds and does not have to liquidate assets to make payments; second, the firm can use liquid assets to finance its activities and investments if other sources of funding are not available or are excessively costly.

The agency cost theory proposed by Jensen and Meckling (1976) suggests that managers and shareholders may hold different perspectives regarding the cost and benefit of cash holdings. According to the agency cost theory, managers have a greater preference for cash, because it reduces the firm's risk and increases managerial discretion. Therefore, it is expected that firms with higher agency costs of managerial discretion have a higher propensity to hold liquid assets.

The pecking order theory postulates an alternative view of cash holdings by firms. According to the pecking order theory, changes in internal resources are the driving force for changes in cash holdings; as a firm maintains surplus internal funds, it accumulates cash and pays back debt when it becomes due. On the contrary, when a firm is deficient in internal funds, it decreases its cash holdings and eventually raises debt (Myers & Majluf, 1984).

Traditional valuation models follow a similar approach, in which a firm's cash holdings are subtracted from its debt outstanding to estimate the firm's financial leverage. The traditional valuation approach considers the cash holding of the firm as negative of its debt outstanding, because cash balances can be effortlessly utilised in debt repayment. Therefore, this approach does not assign significance to the independent role of cash holdings in financially leveraged firms. In contrast to the traditional view, several recent studies support the distinction of independent cash holdings in a firm's financial policies. These studies confirm that cash holdings are significantly related to a firm's value, risk, growth opportunities and cash-flow position.

Globally, firm-level cash holdings have been increased significantly in the period since the financial crises. Southeast Asian countries have encountered multiple financial crises since the advent of the Asian currency crisis of 1997. However, during the global financial crisis of 2007–08, South Asian countries, mainly Indonesia, Malaysia, Thailand and the Philippines weathered the financial turbulence well, because they were better prepared for this shock after their experience with the Asian financial crisis. Since the Asian currency crisis, these countries have strengthened their external balances, reduced government debt and enhanced banking regulations. At the firm level, median cash to assets ratio for Asian firms almost doubled from 6.7% in 1996 to 12.1% in 2006. Asian firms have built up cash holdings by decreasing investment activities such as capital expenditures and acquisitions after the crisis.

This paper investigates the firm-level determinants of cash holdings by Indonesian

firms using cross section data for the 483 largest firms in terms of market capitalisation. Alternatively, the study examines whether net debt is relevant for a firm's financial policies, or whether independent cash holdings play a significant role in such policy decisions, even in the presence debt on the balance sheet.

LITERATURE REVIEW

Literature related to firms' motives in cash holding can be categorised into four categories namely, precautionary (Opler, Pinkowitz, Stulz, & Williamson, 1999), speculative (Harford, 1999), transaction (Keynes, 1936; Baumol, 1952) and tax (Foley, Hartzell, Titman, & Twite, 2007). Keynes (1936) described the transaction cost motive and precautionary motive behind the firms' cash holdings. Miller and Orr (1966) developed a simple model for computing the optimal operating cash balance as a function of the opportunity cost of holding cash and cash requirements for operations. They identified brokerage costs as one of the main source of transaction cost. Theoretical models proposed by Jensen and Meckling (1976), Myers (1977) and Myers and Majluf (1984) stressed that firm-level opportunity costs arise out of suboptimal investments resulting from insufficient liquidity. Myers and Majluf (1984) argue that firms hold a certain level of cash to meet the need for capital expenditures, because raising external financing is more expensive than utilising internally-generated funds in the presence of asymmetric information. Therefore, a firm will face more difficulty in raising capital in cases of higher information asymmetry about the project's cash flows. However, managers and shareholders view the costs and benefits of holding cash differently. Managers have a greater preference for cash, because it reduces firm-level risk and increases managerial discretion. This preference for cash can lead managers to place too much importance on the precautionary motive for holding cash. Therefore, agency theory provides an explanation for why firms with high agency costs from managerial discretion hold too much cash from the perspective of shareholder wealth maximisation (Pinkowitz, Stulz, & Williamson, 2006).

Systematic variations in cash holding propensities of firms have been explained in the literature by industry characteristics and firm profitability (Chudson, 1945). Chudson reports that firms with higher profitability tend to hold more cash as a per cent of total assets than the lower profitability firms. Opler et al. (1999) report that firms in industries in which cash-flow volatility is high tend to hold more liquid assets. Mikkelson and Partch (2003) show that firms with persistent large cash holdings do not underperform when compared with their peer firms. These studies confirm that firms increase their cash holdings in response to the uncertainty attached to their future cash flows.

Harford (1999) postulates that cash-rich firms are more likely to attempt acquisitions than other firms are. These firms are more likely to make diversifying acquisitions and their targets firms are not really attractive to other bidders. Harford reports that mergers in which the bidder is cash-rich are followed by abnormal declines in operating performance. Overall, the evidence supports the explanation of agency costs of free cash flow in acquisitions by cash-rich firms.

Literature linking a firm's cash holdings with its size suggests that there are economies of scale in the transaction motives for cash. Vogel and Maddala (1967) report that larger firms tend to hold less cash as a per cent of their total assets in comparison to smaller firms. Similarly, Faulkender and Wang (2006) finds that there are economies of scale in cash holding that allow larger firms to maintain lower operating cash balances than smaller firms.

The literature also supports competitive motives behind firms' higher than normal cash holdings. Baskin (1987) argues that firms employ liquid assets to signal a commitment to retaliate against encroachment on their product market and to enable firms to rapidly anticipate new opportunities. Cash holdings by firms vary across the world depending on whether or not the economy in which the firm operates has a strong financial system and a well-organised and efficient capital market. Most of the studies cited in the literature review have examined the cash holdings of firms operating in developed economies with strong financial systems, regulators and thriving capital markets. Therefore, the literature appears to confirm that cash holdings are a vital constituent of a firm's financial structure and that a firm's cash policies are correlated with firm's value, growth opportunities, leverage, business risk, competitive market and its access to the capital market. An alternative view to this proposition is that cash holdings are not relevant to firms' financial policies; in fact, firms target to optimise net debt instead. Net debt is defined as debt minus cash. This view is consistent with the pecking order or financing hierarchy model. According to the pecking order model, a firm's net debt reacts passively to changes in the firm's internal funds. As a firm accumulates internal funds, its leverage declines. Internal accumulation of funds increases a firm's cash holdings, which can be utilised to repay debt when it becomes due. Faced with a deficit of internal funds, a firm will initially utilise its cash holdings and eventually raises new debt. Opler et al. (1999) also support this alternative view; they report that most of the variables that are empirically associated with high cash levels are also known to be associated with low leverage. Therefore, findings that cash holdings are relevant to a firm's financial policies may provide merely a partial view of the firm's policies towards cash and debt. Acharya, Almeida and Campello (2007) report that financially-constrained firms with high hedging needs have a strong propensity to accumulate cash while leaving their debt positions unchanged. In contrast, constrained firms with low hedging needs direct most of their free cash flows towards debt repayment. Custodio, Ferreira and Raposo (2005) report strong evidence that financially-constrained firms adjust their cash balances to reflect overall business conditions, holding more cash during recessions. Firms that are not financially constrained also exhibit the same pattern, but the linkage is much weaker. Acharya et al. (2007) argue that firms that have substantial expected investment needs and high uncertainty about the magnitude of these requirements need to hold more cash. The authors categorise these firms as 'hedging' firms. They reason that firms with large but predictable investment opportunities can line up external funding well in advance, and firms with smaller investment requirements can get by without setting aside substantial cash holdings from cash flows. Begenau and Palazzo (2017) report that the share of R&D–intensive firms in U.S. public markets has increased

substantially due to a growing fraction of R&D–intensive newly listed firms (left panel). Second, R&D–intensive firms have entered with progressively higher cash balances (right panel), suggesting a change in the type of R&D–intensive stock market entrants. Anand, Thenmozhi, Varaiya and Bhadhuri (2018) examined the impact of macroeconomic factors on cash holdings and speed of adjustment (SOA) of cash to a target level using a dynamic panel model. These authors report that firms hold more cash in expectation of GDP growth, oil price shocks, an increase in the credit spread and budget deficit, while they hold less cash in expectation of an increase in the exchange rate or an increase in long term and short term bond rates. Bates, Chang and Chi (2018) examined the increase in the value of corporate cash holdings. They argue that such an increase is predominantly driven by the investment opportunity set and cash-flow volatility, as well as secular trends in the product market competition, credit market risk and within-firm diversification. The authors document a secular decrease in the SOA in cash holdings, particularly for financially-constrained firms with cash deficits, suggesting that capital market frictions can account for a trend in the value of cash holdings.

Theory and Hypotheses Development

Under perfect capital market conditions, holding cash and other liquid assets become irrelevant. In the absence of any liquidity premium in such a market, firms that are short on cash holdings can effortlessly raise capital for investment and operating activities from the capital market. However, in the real world, capital markets are far from perfection; they are characterised by liquidity premiums. Therefore, firms that are short of cash and other liquid assets are forced to cut back positive net present value investments and dividends, or raise funds by selling non-liquid assets. All of these actions destroy value for the firm's shareholders. A firm can reduce the likelihood of running short of cash by having lower leverage. Also, holding cash serves as a substitute for equity capital. Therefore, firms facing challenges in raising external capital, including external debt because of pre-existent high leverage or higher cost of debt, or firms facing an overall higher cost of capital are more likely to hold more cash as per cent of their assets.

Also, a dividend-paying firm can accumulate internal capital by reducing its dividend payments, in comparison to a non-dividend-paying firm, which can alternatively raise money from the external capital market. Since the cost of raising external capital is higher than the cost of internal capital, it is more likely that dividend-paying firms need to hold less cash. On the contrary, the availability of cash and liquid assets provides confidence to the firm for dividend payments.

If faced with a cash shortage, a firm with better investment opportunities will be forced to ration capital and make suboptimal investments. Therefore, such a firm is likely to have higher cash holdings. A higher market-to-book ratio can be used as a proxy to represent a firm with higher investment opportunities. Contrary to this, an aggressive firm with high capital expenditures in a particular year is likely to be short of cash holdings. Here firms with higher market-to-book value have higher growth opportunities, while having higher capital expenditures indicates a greater

deployment of a firm's cash.

Miller and Orr (1966) argue that there are economies of scale in cash and liquidity management, meaning that larger firms have a size advantage for cash holding, and smaller firms need to hold more cash as a per cent of their total assets.

In an imperfect capital market characterised by positive transaction costs associated with converting certain assets into cash, firms are likely to prefer holding more liquid assets. This imposes a cost on holding a liquid asset, known as a liquidity premium. Firms having higher net working capital (excluding cash and equivalents) to their total asset are less likely to hold a greater percentage of cash in their total assets.

Also, more profitable firms are likely to hold more cash as a percentage of their total assets. However, due to potential earnings management and window dressing by firms in emerging markets, like Indonesia, a firm's cash flows better represents it profitability. Therefore, firms with robust cash flows are likely to hold higher amounts of cash and other liquid assets.

In the presence of the agency cost of managerial discretion, firm management has an incentive to hold more cash and other liquid assets. By holding higher cash reserves, management can avoid market discipline. Also, management may accumulate cash to gain managerial discretion on certain investment decisions that the capital market would not be willing to finance otherwise. Agency cost of managerial discretion is directly related to the strategic control or ownership structure of the firm. A firm with disperse ownership, where the promoters' holding is trivial is likely to suffer from higher agency cost, in contrast to a firm with a high concentration of strategic/promoter holdings. Therefore, the extent of promoters' holdings in a firm is likely to influence its cash holding.

Firms experiencing larger changes in their cash and other liquid assets due to changes in exchange rates are likely to hold a higher balance of cash and other liquid assets. Holding higher cash reserves aids in hedging and protects these firms against the adverse impact of exchange market fluctuations on their cash flows.

Under perfect market conditions with no informational asymmetry attached to external financing, firms' future investment decisions are independent of their current cash policies. However, in the presence of financing frictions, financially-constrained firms' cash holdings and lower debt levels increase their future funding capacity and in turn, create value by supporting high growth investments. For firms that are not financially constrained, cash holdings and debt level is not material. Firms with high debt and low cash flows are financially constrained, whereas firms having no or very low debt and high cash flows are not. The level of cash and debt of these two categories of firms should demonstrate distinct characteristics with relation to the firms' financial decisions.

This paper examines the cash holding pattern and the firm-level determinants for Indonesian firms in the post-financial reforms (post-OJK) period, considering cross section data for 483 firms for the most recent year, ending March 2018. Initially, firm-level determinants are examined separately for firms' cash holdings, financial leverage and net debt. Then, four sub samples are formed based on two criteria: a) the firm's debt level, i.e. negative or positive, and b) the firm's cash flows, i.e. high or low. These four sub samples are named positive debt–high cash flow, positive debt–low cash flow, negative debt–high cash flow and negative debt–low cash flow. Firms having positive debt and low cash flows are considered financially constrained, while firms having negative debt and high cash flow are considered financially unconstrained or not cash hedging firms. Firms with positive debt and high cash flow can be characterised as growth firms, while firms having negative debt and low cash flows can be characterised as no-growth firms. Firm-level determinants for cash holdings and net debt are examined separately for all of the four sub samples.

RESEARCH METHOD

Sample

The sample is constructed from Thomson Reuters Eikon database, considering 483 Indonesian companies listed on the Indonesia stock exchange for the most recent year ending March 2018. The sample includes firms in the manufacturing and service sectors. Companies from the banking and financial service and the commodity trading sectors are excluded because their businesses involve inventories of marketable securities that are included in cash and because of their need to meet statutory capital requirements. Definitions of the dependent and independent variables are provided in Table 1.

Firm-level determinants are examined separately for firms' cash holdings, financial leverage and net debt. Then, four sub samples are formed based on two criterion, a) the firms' debt level, i.e. negative or positive; and b) firms' cash flows, i.e. high or low. These four sub samples are named positive debt–high cash flow, positive debt–low cash flow, negative debt–high cash flow and negative debt–low cash flow. Firms with positive debt and low cash flows are considered financially constrained,

Table 1.
Definitions of financial Variables

Variable	Definition
Cash Holding	Cash plus marketable securities/total assets
Net Debt	(Debt–Cash plus marketable securities)/total assets
Firm Size	Log of Total Assets
MKTB	Market-to-book ratio
Cash Flow	Ratio of net income after tax plus depreciation/total assets
NWC	Current assets (net of cash) minus current liabilities/total assets
LEV	Total debt/total assets
CAPEX	Capex/total assets
Strategic Holding	Per cent of strategic ownership
Cost of Debt	Weighted cost of short term debt plus weighted cost of long term debt (Thomson Reuters)
WACC	Weighted cost of dent plus weighted cost of equity (Thomson Reuters)
Div Dummy	Takes value of 1 if the firm has paid div.; otherwise, takes value of 0.
FX Dummy	Takes value of 1 if exchange rate impacts the firm's cash; otherwise, takes value of 0.

while firms having negative debt and high cash flow are considered financially unconstrained or not cash hedging firms. Firms with positive debt and high cash flow can be characterised as growth firms, while the firms having negative debt and low cash flows can be characterised as no-growth firms. In the sample, 99 firms are under positive debt–high cash flow, 254 firms are under positive debt–low cash flow, 32 firms are under negative debt–high cash flow, and 98 firms are under negative debt–low cash flow. The firm-level determinants for cash holdings and net debt are examined separately for all of the four sub samples.

Model Specification

Linear multiple regression analysis is conducted using a firm's cash holding to total assets as the dependent variable, and firm-level financial variables and other variables are independent variables. Dummy variables are used for dividend payments and the exchange rate impact on a firm's cash holding. The dummy variable of dividend payment takes a value of 1 if the firm pays dividend; otherwise it is 0. Similarly, the dummy variable for the exchange rate impact takes a value of 1 if there is a change in a firm's cash holding due to exchange rate fluctuations; otherwise it is 0.

Various firm-level financial variables and other variables that may influence the cash holding of a firm are identified from the literature and are used in the multiple regression as independent variables. These independent variables are described in Section 3, Theory and Empirical Hypotheses. Initially, it is assumed that cash holdings are not correlated over a period of time; thus a fixed effects model is used. However, for this sample data, there is a strong correlation for cash holding over the last one-year period. Hence, $Cash\ Holding_{t-1}$, a lagged endogenous response variable, is added in the independent variables.

$$\begin{aligned} Cash\ Holding = {} & \beta_0+\beta_1(Size)+\beta_2(MKTB)+\beta_3(Cash\ flow)+\beta_4(NWC)+\beta_5(LEV) \\ & +\beta_6(CAPEX)+\beta_7(Strategic\ Holding)+\beta_8(Cost\ of\ Debt) \\ & +\beta_9(WACC)+\beta_{10}(Div\ Dummy)+\beta_{11}(FX\ Dummy) \end{aligned} \quad (1)$$

$$\begin{aligned} Cash\ Holding = {} & \beta_0+\beta_1(Cash\ Holding_{t-1})+\beta_2(Size)+\beta_3(MKTB)+\beta_4(Cash\ flow) \\ & +\beta_5(NWC)+\beta_6(LEV)+\beta_7(CAPEX)+\beta_8(Strategic\ Holding) \\ & +\beta_9(Cost\ of\ Debt)+\beta_{10}(WACC)+\beta_{11}(Div\ Dummy) \\ & +\beta_{12}(FX\ Dummy) \end{aligned} \quad (2)$$

Alternatively, regression analysis is conducted using firm leverage and net debt as dependent variables and firm-level financial variables and other variables are independent variables. Net debt is computed by subtracting cash from the total debt; then, the ratio of net debt to total assets is computed for the sample firms. Initially, it is assumed that net debt is not correlated over a period of time, thus a fixed effects model is used. However, for the sample data, there is a strong correlation of net debt over the last one-year period. Hence, $Net\ Debt_{t-1}$, a lagged endogenous response variable, is added in the independent variables. However, the regression results are corrected for heteroscedasticity, and the lagged variable $Net\ Debt_{t-1}$ shows strong multicollinearity with two other independent variables, namely, *Cash Flow* and *Net*

Working Capital. Therefore, another regression is conducted by dropping these two variables from the list of independent variables.

$$Leverage = \beta_0+\beta_1(Size)+\beta_2(MKTB)+\beta_3(Cash\ flow)+\beta_4(NWC)+\beta_5(CAPEX) +\beta_6(Strategic\ Holding)+\beta_7(Cost\ of\ Debt)+\beta_8(WACC) +\beta_9(Div\ Dummy)+\beta_{10}(FX\ Dummy) \quad (3)$$

$$Net\ Debt = \beta_0+\beta_1(Size)+\beta_2(MKTB)+\beta_3(Cash\ flow)+\beta_4(NWC)+\beta_5(CAPEX) +\beta_6(Strategic\ Holding)+\beta_7(Cost\ of\ Debt)+\beta_8(WACC) +\beta_9(Div\ Dummy)+\beta_{10}(FX\ Dummy) \quad (4)$$

$$Net\ Debt = \beta_0+\beta_1(Net\ Debt_{t-1})+\beta_2(Size)+\beta_3(MKTB)+\beta_4(Cash\ flow)+\beta_5(NWC) +\beta_6(CAPEX)+\beta_7(Strategic\ Holding)+\beta_8(Cost\ of\ Debt)+\beta_9(WACC) +\beta_{10}(Div\ Dummy)+\beta_{11}(FX\ Dummy) \quad (5)$$

$$Net\ Debt = \beta_0+\beta_1(Net\ Debt_{t-1})+\beta_2\ (Size)+\beta_3(MKTB)+\beta_4(CAPEX) +\beta_5(Strategic\ Holding)+\beta_6(Cost\ of\ Debt)+\beta_7(WACC) +\beta_8(Div\ Dummy)+\beta_9(FX\ Dummy) \quad (6)$$

Similar multiple linear regression analysis is conducted for cash holding and net debt on firm-level financial variables and other variables using the four subsamples separately. Correlations between sample firms' cash flows and market-to-book ratio are also estimated to assess the relationship between the firms' cash flows and growth opportunities.

RESULTS AND DISCUSSIONS

Table 2 provides the summary statistics for the variables used in the study for the sample firms. The average cash holding for the sample firms is 9.83% of total assets. The smallest cash holding of 0.0135% is recorded for an online services firm NFC Indonesia Tbk PT and the largest is 64.14%, recorded for an iron and steel firm namely, Betonjaya Manunggal Tbk PT. The sample is fairly balanced, as it covers a wide spectrum of firms having market-to-book ratios as low as 0 to a high of 40.25, and firms with zero debt to highly leveraged firms with debt to total asset ratios as

Table 2.
Summary Statistics of dependent and independent Variables for the sample Firms

	Mean	Minimum	25%	Median	75%	Maximum	Count
Cash Holding	0.0983	0.0001	0.0213	0.0649	0.1331	0.6414	483
Cash Holding t-1	0.1033	0.0002	0.0208	0.0639	0.1482	0.7886	483
Firm Size	28.4758	21.5044	27.4068	28.4966	29.6130	33.3208	483
Market-to-book Ratio	1.9569	0.000	0.5228	1.0714	2.3640	40.2564	483
Cash Flow	0.0105	-2.0842	-0.0030	0.0271	0.0654	0.5267	483
Net Working Capital	-0.0517	-12.4352	-0.0829	0.0186	0.1571	0.9887	483
Total Leverage	0.3574	0.0000	0.0648	0.2397	0.4052	12.4308	483
Capex	0.0502	0.0000	0.0082	0.0282	0.0701	0.6862	483
Strategic Holding	0.7225	0.0000	0.6060	0.7595	0.8536	1.0000	483
Cost of Debt	0.0619	0.0000	0.0505	0.0505	0.0765	0.1014	483
WACC	0.0690	-0.0966	0.0465	0.0665	0.0904	0.2373	483
Div Dummy	0.3602	0.0000	0.0000	0.0000	1.0000	1.0000	483
FX Dummy	0.3810	0.0000	0.0000	0.0000	1.0000	1.0000	483

high as 12.43. The average net working capital for the sample firms is negative; the highest is 98.87%, representing a varied sample of firms from very lean working capital structure to significantly liquid firms. The sample included non-dividend-paying firms and dividend-paying firms; firms significantly impacted by exchange rates and firms immune to exchange rate variations; and firms with no strategic holdings to 100% strategic holding, and firms with no capital expenditure to firms with high capital expenditure of 68.62% of their total assets.

Table 3 presents the result of the regression for firms' cash holdings on firm-level financial variables and other variables. The second column of Table 2 presents the result of the regression for cash holding without an endogenous lag variable. Column 3 of Table 2 shows the regression results for cash holdings with the endogenous lag variable *Cash Holding*$_{t-1}$ included in the independent variables.

As per the results of the regression without the lag variable, firm size, cash flow, net working capital, leverage, cost of debt and weighted average cost of capital, the dividend dummy, and the exchange rate effects (FX) dummy are statistically significant. Out of these significant variables, firm size, net working capital, and leverage have a negative slope coefficient representing a negative relation between these variables and firms' cash holding. A negative coefficient of firm size conveys

	OLS Cash Holding	OLS Cash Holding with Lag Value	OLS Leverage	OLS Net Debt	OLS Net Debt (Adjusted for multicollinearity)
Adjusted R^2	0.1272	0.5892	0.5806	0.9930	0.9929
F-Statistics	7.3865	58.6312	61.9124	6250.42	7537.32
Prob (Wald F-Statistics)	0.0000	0.0000	0.0000	0.0000	0.0000
C	0.1631	-0.0493	0.8432	0.1701	0.1957
	1.8212*	-0.6928	1.6220*	1.4833	0.1027
Cash Holding$_{t-1}$	----------	0.6483	---------	0.9906	0.9937
		8.5049***		210.25***	0.0000
Firm Size	-0.0057	0.0014	-0.0266	-0.0054	-0.0062
	-1.9075*	0.5621	-1.2215	-1.3344	-1.4574
Market-to-book Ratio	0.0002	0.0002	-0.0001	-0.0001	-0.0001
	1.3720	1.0060	-0.1735	-0.7436	-0.7650
Cash Flow	0.1107	0.0914	-0.8340	-0.0919	
	2.3162**	2.4343***	-1.0861	-2.1839**	
Net Working Capital	-0.0280	-0.0212	-0.6931	0.0097	
	-2.7084***	-2.6085***	-4.7617***	1.4207	
Leverage/Cash Holding	-0.0191	-0.0080	-0.6861		
	-1.8475*	-1.2709	-5.0531***		
Capex	-0.0683	-0.1726	0.0173	0.2283	0.2103
	-1.2282	-3.1111***	0.0632	3.3731***	3.0469***
Strategic Holding	0.0246	0.0198	0.1856	-0.0154	-0.0230
	0.9603	1.3257	1.4246	-1.0065	-1.6722*
Cost of Debt	0.6096	0.2187	1.5131	0.0003	0.0256
	2.4792***	1.4446	1.2805	0.0020	0.1284
WACC	0.3787	0.2253	0.4065	-0.1429	-0.1325
	2.6143***	2.5471***	0.5971	-1.3801	-1.2841
Div Dummy	0.0428	0.0083	0.8014	0.0104	0.0041
	3.8601***	1.0546	1.6264*	1.3252	0.5904
FX Dummy	0.0253	0.0081	0.0744	0.0016	0.0005
	2.4092***	1.1974	0.8832	0.2599	0.0855

Table 3. Heteroscedasticity-consistent regression results for cash holding, leverage and net debt on firm-level financial and other variables (*p < 0.10, **p < 0.05, ***p< 0.01.)

that a larger firm holds less cash as a per cent of its total assets, compared to smaller firms. This result validates the hypothesis that there are economies of scale in cash and liquidity management. Also, a negative coefficient of net working capital is also consistent with the hypothesis that firms having higher net working capital (excluding cash and equivalents) to their total asset are less likely to hold more cash as part of their total assets. The negative coefficient of leverage shows that firms with higher leverage hold less cash as a per cent of their total assets. Although, the result is in contrast to the precautionary motive of holding cash, this is possible because higher debt ingests the cash and liquid assets of a firm. The coefficients of five variables, namely, cash flow, cost of debt, weighted average cost of capital, the dividend dummy, and FX dummy are positive, indicating a positive relation between the value of these variables and a firm's cash holdings. The positive coefficients of both cost of debt and cost of capital indicate that firms facing difficulty in raising external capital due to the higher cost of funding are expected to accumulate internally-generated cash to support their investment plans. The positive coefficient of the dividend dummy contrasts the hypothesis that dividend-paying firms need to hold less cash, because they can cut dividend payments in case of urgent internal funds requirements. However, it confirms the opposite view that availability of cash provides confidence to a firm for dividend payments. The positive coefficient of the FX dummy confirms that firms having volatile cash balances on account of exchange rate fluctuations, are likely to hold higher cash for the precautionary motives. Also, positive coefficient of cash flow indicates that firms with robust cash flows are likely to hold higher cash as per cent of their total assets.

On introducing the lag variable *Cash Holding*$_{t-1}$ as one of the independent variable in the regression analysis, adjusted R-square improves significantly from 12.72% to 58.92%. However, many of the independent variables that were statistically significant in the preceding regression are now statistically insignificant. The newly introduced lag variable *Cash Holding*$_{t-1}$ is highly significant at the one per cent level. The statistically significant variables as shown in Column 3 of Table 3 are cash flow, net working capital, weighted average cost of capital and capital expenditure. It is worth noting that capital expenditure was not statistically significant in the preceding regression analysis. Because the coefficients of cash flow, net working capital, and weighted average cost of capital are the same as in the preceding regression (Column 2 of Table 3), similar inferences can be drawn for these variables, as explained above. The negative coefficient of capital expenditures specifies that firms with higher capital expenditures requirements tend to have lower cash holdings, because these firms require greater deployment of their existing cash resources. For the OLS regression the adjusted R-square is 0.5806; the statistically significant variables are net working capital, cash holding and dividends. The coefficient of net working capital and cash holding are negative and positive for dividends. Therefore, firm leverage shows an inverse relation with cash holding and net working capital. Also, high leverage firms are more likely to pay dividends. However, other variables that are statistically significant for cash holding regression, such as cash flow, capital expenditures and weighted average cost of capital, are not impacting firms' leverage. This is in contrast to the findings of Opler et al. (1999) found that

most of the variables that are empirically associated with high cash levels are also associated with low leverage. Columns 5 and 6 of Table 3 present the result of the regression for net debt on similar financial and other firm-level variables. Net debt is calculated by subtracting a firm's cash holding from its outstanding debt. As per Column 5, firms' cash flow and capex are statistically significant along with its own lagged value. For a multicollinearity adjustment, two independent variables were removed from the regression and the corrected results are presented in Column 6 of Table 3. As per the corrected results, two independent variables, namely, capital expenditure and strategic holding, demonstrate significant relations with net debt. Therefore, capital expenditure is the only variable showing a statistically significant relation in both regressions using cash holding and net debt as dependent variables. The coefficient of capital expenditure is negative in the cash holding regression, while it is positive in the net debt regression; this implies that capital expenditure has a similar association with higher cash holding and lower debt outstanding. The other independent variables do not demonstrate such analogous association with cash holding and net debt. Therefore, it is not imperative to assume substitutability of firms' cash holdings and outstanding debt. To investigate the substitutability of cash holding and net debt in the context of financially-constrained, non-constrained and growth firms, four sub samples were formed based on two criterion, a) the firms' debt level, i.e. negative or positive; and b) the firms' cash flows, i.e. high or low. These four sub samples are named as positive debt–high cash flow, positive debt–low cash flow, negative debt–high cash flow and negative debt–low cash flow.

Table 4 provides the descriptive statistics for the four sub categories of firms. Most of the firms were financially-constrained firms, followed by growth firms and no-growth firms, while financially unconstrained (no-hedging firms) were fewest in number. Financially-constrained firms are characterised by low cash holdings, high financial leverage, moderate valuation, negative cash flows and net working capital, mediocre capital expenditure and lowest probability of dividend payment. Contrarily, no-hedging firms are characterised by highest cash holding, low debt outstand-

	Net Debt	Cash Holding	MKTB	CFLOW	NWC	CAPEX	Cost Of Debt	WACC	Div	FX
Positive Debt–High Cash Flow (99 firms)										
Mean	0.1962	0.0776	0.7685	0.0946	0.0600	0.0660	0.0607	0.0713	0.5859	0.4242
Median	0.1668	0.0714	1.7321	0.0780	0.0497	0.0397	0.0505	0.0673	1	0
Std. Dev.	0.1524	0.0543	26.1488	0.0688	0.2911	0.0671	0.0213	0.0396	0.4951	0.4967
Positive Debt –Low Cash Flows–Financially-Constrained Firms (254 firms)										
Mean	0.5009	0.0524	2.0554	-0.0434	-0.1818	0.0473	0.0608	0.0636	0.2205	0.3386
Median	0.3035	0.0384	0.8681	0.0070	-0.0210	0.0245	0.0543	0.0615	0	0
Std. Dev.	1.2807	0.0508	4.6379	0.2121	1.1719	0.0741	0.0198	0.0347	0.4154	0.4742
Negative Debt–Low Cash Flows (98 firms)										
Mean	-0.1463	0.1888	2.5211	0.0070	0.1143	0.0415	0.0639	0.0745	0.3673	0.4184
Median	-0.1028	0.1692	0.9941	0.0261	0.0618	0.0232	0.0505	0.0760	0	0
Std. Dev.	0.1357	0.1471	5.9812	0.0981	0.3376	0.0601	0.0281	0.0475	0.4846	0.4958
Negative Debt–High Cash Flow No-hedging Firms (32 firms)										
Mean	-0.2251	0.2503	3.1244	0.1892	0.1269	0.0504	0.0682	0.0873	0.75	0.46875
Median	-0.1976	0.2518	2.8635	0.1614	0.0933	0.0456	0.0518	0.0831	1	0
Std. Dev.	0.1583	0.1521	2.7368	0.0887	0.1733	0.0403	0.0311	0.0422	0.4399	0.5070

Table 4.
Descriptive statistics for four subcategories of firms

ing, higher valuation, highest cash flows and net working capital, average capital expenditure and high propensity to pay dividends. Growth firms with positive debt and high cash flows show similar characteristics with no-hedging firms. The cost of debt, cost of capital and the effect of foreign exchange fluctuation are indistinguishable among the four sub samples.

Table 5 provides the correlation between firms' cash flow and market-to-book ratio. Since the market-to-book ratio represents firms' growth opportunity, a higher correlation between the above two variables represent a better integration of firms' cash inflows and outflows. According to Table 5, negative debt and high cash-flow firms have the highest correlation, followed by positive debt and high cash flows and positive debt and low cash flows. The lowest correlation is recorded for negative debt and low cash-flow firms. The high correlation for negative debt–high cash-flow firms indicates that firms with high growth opportunity and high cash flows rely on internal accruals to finance their growth opportunities. They build cash reserves in anticipation of growth, rather than relying on external debt. Contrary to this, the positive debt–high cash-flow firms showing moderate correlation between cash flow and market-to-book ratio, indicates that these firms rely on external debt as well as internal cash accruals for financing growth opportunities. Financially-constrained firm, which are categorised as positive debt–low cash-flow firms, have a lower correlation between cash flows and growth opportunities. The combined effect of this low correlation and the lowest median value of market-to-book ratio (see Table 4) indicates that financially-constrained firms are unable to generate growth opportunities due to lack of cash reserves, despite having access to external debt. Therefore, high cash reserves appear to be an important factor in augmenting the growth opportunities for a firm.

Table 6 presents the result of regression analysis for cash holding and net debt for firm-level financial and other variables for two subcategories, namely, financially-constrained and no-cash hedging firms. For financially-constrained firms, cash holding is impacted significantly by firm size, cash flow, capital expenditure and weighted average cost of capital along with its own lagged value. Firm size, cash flow and weighted average cost of capital have positive coefficients; whereas, capital expenditure has a negative coefficient. Therefore, large, financially-constrained firms with high cash flows and high cost of capital tend to hold more cash. Also, higher capital expenditures are likely to consume firms' cash holdings.

Net debt is impacted significantly by only two variables, namely, capital expenditure and weighted average cost of capital, apart from its own value. Capital expenditure has a positive coefficient, while cost of capital has a negative coefficient. An inference can be drawn from the above result that for financially-constrained firms,

Table 5.
Correlation between firms' cash flows and market-to-book ratio

Negative Debt–High Cash Flow	0.2625
Negative Debt–Low Cash Flow	0.0281
Positive Debt–High Cash Flow	0.2087
Positive Debt–Low Cash Flow	0.1103
For entire sample firms	0.0579

net debt has been used to finance the capital expenditure. Moreover, similar to cash holdings, higher cost of capital works as a deterrent for firms' net debt. Therefore, for financially-constrained firms, cash holding seems to be more relevant factor influencing several facets of financial policies in contrast to the net debt.

For no-cash hedging firms that are characterised by negative debt and high cash flows, cash holding is determined by only two variables, namely firm size and capital expenditure in addition to its own lagged value. Firm size influence cash holding negatively; whereas, capital expenditure influences it positively. The results indicate that there is an economy of scale in cash holdings—larger firms are required to hold lesser cash in comparison to relatively smaller firms. The positive impact of capital expenditures on cash holding is similar to the results for financially-constrained firms. Net debt is determined by only one factor, i.e. capital expenditure, which is similar to the results for financially-constrained firms; the coefficient of capital expenditure is negative for net debt in the case of the no-cash-hedging firms as well. This means that capital expenditures are likely to eat up firms' cash holdings. Henceforth, results drawn from Table 6 suggest that fewer factors determine firms' cash holding and net debt in case of no-cash-hedging firms as compared to the financially-constrained firms.

Table 7 presents the results for the remaining two subcategories, namely, positive

	Financially-constrained Firms		No-Cash Hedging Firms	
	OLS Cash Holdings	OLS Net Debt	OLS Cash Holdings	OLS Net Debt
Adjusted R^2	0.4359	0.9986	0.6184	0.6286
F-Statistics	17.2976	16981.88	5.1874	5.7700
Prob (Wald F-Statistics)	0.0000	0.0000	0.0000	0.0000
C	-0.0896	0.0596	0.7534	-0.1662
	-1.5653	0.8819	0.8974	-0.2679
$Cash\ Holding_{t-1}$ /$Net\ Debt_{t-1}$	0.5094	0.9954	0.8348	0.7702
	6.3726***	379.01***	6.3234***	6.0244***
Firm Size	0.0037	-0.0025	-0.0302	0.0099
	1.9783**	-1.1161	-9.7519***	0.4475
Market-to-book Ratio	0.0006	-0.0006	-0.0004	0.0047
	1.1917	-0.9830	-0.0373	0.5745
Cash Flow	0.0335	-0.0223	0.3879	-0.3897
	1.9993**	-1.2919	1.2211	-1.0986
Net Working Capital	-0.0041	-0.0013	0.0667	-0.0543
	-1.5335	-0.3629	0.4365	-0.4476
Capital Expenditure	-0.1205	0.2602	-1.3245	1.0264
	-3.0161***	2.9061***	-1.7880*	1.6630*
Strategic Holding	-0.0031	0.0117	0.0791	-0.1448
	-0.2531	0.3967	0.8268	-1.4170
Cost of Debt	-0.1313	0.2288	0.3224	-0.4799
	-0.9582	1.1229	0.5508	-0.8515
WACC	0.2751	-0.2561	-0.0439	0.2721
	4.3259***	-2.9861***	-0.0655	0.4730
Div Dummy	-0.0005	0.0198	0.0575	-0.0597
	-0.0919	2.7176***	1.0977	-1.1028
FX Dummy	0.0032	-0.0010	0.0549	-0.0387
	0.6426	0.8463	1.1173	-0.8199
Leverage	0.0023	--------	1.0034	---------
	2.0668**		1.5505	

Table 6. Heteroscedasticity-consistent regression results for cash holding and net debt on firm-level financial and other variables for financially-constrained and no-cash hedging firms (*p < 0.10, **p < 0.05, ***p< 0.01.)

debt–high cash flow and negative debt–low cash flow firms. Positive debt–high cash-flow firms are considered to be high growth firms, as they show a high median value of market-to-book ratio and a high correlation between firms' cash flow and market-to-book value. For these firms, cash holding is determined by growth opportunities, cash flows, net working capital, capital expenditures and the cost of debt, apart from its own lagged value. The coefficients of growth opportunities and the cost of debt are positive, indicating that firms hold more cash in anticipation of growth opportunities and to avoid the higher cost of external debt to finance growth opportunities. The coefficients of net working capital and capital expenditures are negative, indicating that net working capital and capital expenditures consume a substantial portion of firms' cash holdings. Unlike financially-constrained and no-cash-hedging firms, the coefficient of cash is negative for this subcategory. This indicates that firms' cash flows are not sufficient to fund growth opportunities. Growth opportunities, capital expenditures and the cost of debt significantly influence firms' net debt for high growth subcategory. A negative coefficient of market-to-book ratio indicates that higher growth opportunity firms tend to reduce their outstanding debt using their cash reserves. As net debt is defined as outstanding debt minus cash, a positive coefficient of capital expenditure seems logical on the grounds that higher capital expenditures consume up firms' cash reserves, resulting in more outstanding debt. The negative and statistically significant coefficient of capital expenditure for cash holding regression also validates the above reasoning. A negative coefficient

	Positive Debt–High Cash Flow		Negative Debt–Low Cash Flow	
	OLS Cash Holdings	OLS Net Debt	OLS Cash Holdings	OLS Net Debt
Adjusted R^2	0.3869	0.8828	0.5337	0.4572
F-Statistics	6.1548	68.1157	10.2522	8.4297
Prob (Wald F-Statistics)	0.0000	0.0000	0.0000	0.0000
C	-0.1500	0.0325	-0.3780	0.3932
	-1.3223	0.2320	-1.6844*	1.7862*
$Cash\ Holding_{t-1}$ /$Net\ Debt_{t-1}$	0.4620	0.8531	0.5145	0.5119
	4.5420***	17.6776***	5.0392***	5.1137***
Firm Size	0.0047	0.0021	0.0131	-0.0138
	1.2944	0.5282	1.5987	-1.7434*
Market-to-book Ratio	0.0002	-0.0002	0.0048	-0.0048
	3.3093***	-2.4074**	1.7280*	-1.7313*
Cash Flow	-0.0784	0.0401	-0.1396	0.1435
	-1.7410*	0.6556	-1.0687	1.1164
Net Working Capital	-0.0263	-0.0012	-0.1021	0.1031
	-1.9985**	-0.0871	-1.9284**	1.9649**
Capital Expenditure	-0.1036	0.1495	-0.0985	0.1000
	-2.0736**	2.1921**	-0.7085	0.7163
Strategic Holding	0.0395	-0.0431	0.0750	-0.0700
	1.3449	-1.1151	1.7239*	-1.6642*
Cost of Debt	0.4106	-0.4553	0.4945	-0.5119
	2.3040**	-2.2257**	1.2667	-1.3433
WACC	0.0965	-0.1268	-0.2436	0.2439
	0.8674	-0.9627	-0.9694	0.9655
Div Dummy	-0.0019	-0.0058	0.0262	-0.0270
	-0.1735	-0.4174	1.0573	-1.1159
FX Dummy	0.0029	-0.0022	0.0027	-0.0031
	0.3338	-0.1998	0.1210	-0.1381
Leverage	0.0249	----------	0.5577	---------
	0.6221		2.9236***	

Table 7.
Heteroscedasticity-consistent regression results for cash holding and net debt on firm-level financial and other variables for positive debt–high cash flow and negative debt–low cash flow firms (*p < 0.10, **p < 0.05, ***p< 0.01.)

of cost of debt is in line with the hypothesis that firms experiencing a higher cost of external debt are likely to rely less on the debt than the firms' internal accruals.

For negative debt and low cash-flow firms, cash holding is influenced significantly by firms' growth opportunities, net working capital, strategic holdings and financial leverage. These firms have low cash flows and hold cash reserves over and above their outstanding debt. Low cash flows point towards smaller market shares, and negative debt points towards lower growth opportunities. The coefficients of growth opportunities, strategic holding, and financial leverage are positive, indicating that firms with decent growth opportunities (within their specific subcategory) and high leverage with higher strategic ownership tend to hold higher cash reserves. High strategic holding can be considered a substitution for the reduced agency cost of managerial discretion. Therefore, conservative firms undergoing reduced growth opportunities tend to hold cash for precautionary motives. The negative coefficient of net working capital indicates that firms' higher net working capital holdings reduce the requirement for cash reserves. For low-growth firms, net debt is impacted significantly by firm size, growth opportunities, net working capital and strategic holdings. The coefficients of firm size, growth opportunities and strategic holdings are negative; whereas, the coefficient of net working capital is positive. The negative coefficients of firm size and strategic holding to firms' net debt indicates that larger firm with a high concentration of strategic ownership tend to hold more cash in order to hedge against the firms' leverage. Overall, for this subcategory of firms (low-growth firms) net debt appears to be a somewhat more relevant factor than cash holding.

MANAGERIAL IMPLICATIONS IN THE SOUTHEAST ASIAN CONTEXT

Figure 1 summarises the relevant factors for Indonesian firms' cash holding for four subcategories namely, no-hedging firms, growth firms, low-growth firms and financially-constrained firms.

Capital expenditure seems to be a relevant factor for cash holding for three subcategories of firms, but not for low-growth firms. Cash holdings of financially-constrained firms are influenced by the most number of factors, followed by growth firms and low-growth firms. Comparatively, cash holdings of no-hedging firms are influenced by the least number of factors, i.e. firm size and capital expenditure. Therefore, for financially-constrained firms, cash holding is central to their cash flows, working capital decisions, capital expenditures planning, capital structure and overall cost of financing. Similarly, for growth firms, it is crucial to firms'

	Negative Debt	Positive Debt
High	**No-hedging Firms** Firm Size, Capital Expenditure	**Growth Firms** Growth Opportunities, Cash Flow, Net Working Capital, Capital Expenditure, Cost of Debt
Low	**Low-growth firms** Growth Opportunities, Net Working Capital, Strategic Holding, Leverage	**Financially-constrained Firms** Firms Size, Cash flows, Net Working Capital, Capital Expenditure, Cost of Capital, Leverage

Figure 1.
Firms' Cash Holding and Relevant Factors

growth opportunities, cash flows, working capital decisions, capital expenditure planning and cost of debt financing. For low-growth firms, cash holding is influenced by growth opportunities, working capital, strategic ownership and capital structure. No-hedging firms seem to be indifferent about cash holdings. This is logical, given the fact that these firms have negative net debt; in other words, their cash reserves are higher than their outstanding debt and they earn high cash flows. Therefore, these firms are not contingent on their cash holdings to fund their growth opportunities.

Figure 2 summarises the relevant factors for firms' net debt for four subcategories, namely, no-hedging firms, growth firms, low-growth firms and financially-constrained firms. Unlike cash holdings, net debt appears to be most relevant for low-growth firms, followed by growth firms and financially-constrained firms, equally. Similar to the cash holdings, net debt is least relevant for no-hedging firms. Likewise, capital expenditure seems to be a relevant factor for firms' net debt under three subcategories, except low-growth firms. Since, a low-growth firm has negative net debt and low cash flows combined with the fewest growth opportunities, capital expenditure seems to have no influence on firms' cash holdings or net debt.

The relevance of cash holding or net debt for managers in South East Asian countries varies across the four subcategories of firms. Financially-constrained and growth firms place more confidence in cash holding than net debt in forming their financial decisions. On the other hand, net debt seems to be central for low-growth firms' financial decisions. No-hedging firms are indifferent towards cash holdings and net debt, as they already hold cash reserves in excess of their outstanding debt and also enjoy strong cash flows. Overall, cash holding appears to be more central to firms' financial decisions in comparison to their net debt.

THEORETICAL IMPLICATIONS

This study finds strong evidence that firms with robust cash flows hold more cash. This establishes the validity of the fact that more profitable firms that generate sustainable cash flows are likely to hold more cash. It also establishes that Indonesian firms that have more working capital tend to hold lesser cash. Higher working capital indicates higher investments using non-cash liquid assets. Therefore, holding more non-cash liquid assets moderates the necessity to hold cash. The study confirms that firms that need to deploy higher capital expenditures tend to hold less cash. Also, firms that face challenges to raise external capital due to the higher cost of capital tend to accumulate greater cash to use as internal equity, when required.

	Negative Debt	Positive Debt
High	**No-hedging Firms** Capital Expenditure	**Growth Firms** Growth Opportunities, Capital Expenditure, Cost of Debt
Low	**Low-growth firms** Firm Size, Growth Opportunities, Strategic Holding, Net Working Capital	**Financially-Constrained Firms** Capital Expenditure, Cost of Capital, Dividend

Figure 2.
Firms' Net Debt and Relevant Factors

CONCLUSION

The relevance of cash holding or net debt varies with the financial characteristics of firms. For financially-constrained firms, cash holding is central to their cash flows, working capital decisions, capital expenditures planning, capital structure and overall cost of financing. Similarly, for growth firms, it is crucial to firms' growth opportunities, cash flows, working capital decisions, capital expenditure planning and cost of debt financing. For low-growth firms, cash holding is influenced by growth opportunities, working capital, strategic ownership and the firm's capital structure. The no-hedging firms seem to be least concerned about cash holdings. Rather than cash holdings, net debt appears to be most relevant for low-growth firms, followed by growth firms and financially-constrained firms, equally. Similar to cash holdings, net debt is least relevant for no-hedging firms.

Acknowledgement

The infrastructural support provided by FORE School of Management, New Delhi in completing this paper is gratefully acknowledged. The author is thankful to the editor and referees for their valuable inputs and feedback.

REFERENCES

Acharya, V., Almeida, H., & Campello, M. (2007). Is cash negative debt? A hedging perspective on corporate financial policies. *Journal of Financial Intermediation*, *16*(4), 515–554.

Anand, L., Thenmozhi, M., Varaiya, N., & Bhadhuri, S. (2018). Impact of macroeconomic factors on cash holdings? A dynamic panel model. *Journal of Emerging Market Finance*, *17*(1_suppl), 27S–53S.

Baskin, J. (1987). Corporate liquidity in the games of monopoly power. *Review of Economics and Statistics*, *69*(2), 312–319.

Bates, T., Chang, C., & Chi, J. (2018). Why has the value of cash increased over time? *Journal of Financial and Quantitative Analysis*, *53*(2), 749–787.

Baumol, W. (1952). The transaction demands for cash: An inventory theoretic approach. *The Quarterly Journal of Economics*, *66*(4), 545–556.

Begenau, J., & Palazzo, B. (2017). *Firm selection and corporate cash holdings* (NBER Working Paper No. 23249). Cambridge, MA: National Bureau of Economic Research Retrieved from: http://www.nber.org/papers/w23249.pdf

Chudson, W. (1945). A survey of corporate financial structure. In W. Chudson (Ed), *The pattern of corporate financial structure: A cross-section view of manufacturing, mining, trade, and construction, 1937* (pp. 1-16). Cambridge, MA: National Bureau of Economic Research

Custodio, C., Ferreira, M., & Raposo, C. (2005). *Cash holdings and business conditions*. Lisboa: ISCTE Business School.

Faulkender, M., & Wang, R. (2006). Corporate financial policy and the value of cash. *The Journal of Finance*, *61*(4), 1957–1990.

Foley, C., Hartzell, C., Titman, S., & Twite, G. (2007). Why do firms hold so much cash? A tax based explanation. *Journal of Financial Economics*, *86*(3), 579–607.

Harford, J. (1999). Corporate cash reserves and acquisitions. *Journal of Finance*,

54(6), 1969–1997.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency cost, and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360.

Keynes, J. M. (1936). The *general theory of employment, interest, and money.* London: McMillan.

Mikkelson, W., & Partch, M. (2003). Do persistent large cash reserves hinder performance? *Journal of Financial and Quantitative Analysis*, *38*, 275–294.

Miller, M., & Orr, D. (1966). A model of the demand for money by firms. *Quarterly Journal of Economics*, *80*(3), 413–435.

Myers, S. (1977). Determinants of corporate borrowings. *Journal of Financial Economics*, *5*(2), 147–175.

Myers, S., & Majluf, N. (1984). Corporate financing and investment decisions when firm have information that investors do not have. *Journal of Financial Economics*, *13*(2), 187–221.

Opler, T., Pinkowitz, L., Stulz, R., & Williamson, R. (1999). The determinants and implications of corporate cash holdings. *Journal of Financial Economics*, *52*(1), 3–46.

Pinkowitz, A., Stulz, R., & Williamson, R. (2006). Does the contribution of corporate cash holdings and dividends to firm value depend on governance? A cross-country analysis. *The Journal of Finance*, *61*(6), 2725–2751.

Vogel, R., & Maddala, G. (1967). Cross section estimates of liquid asset demand by manufacturing Corporations. *The Journal of Finance*, *22*(4), 557–575.