CASH HOLDINGS, LEVERAGE, OWNERSHIP CONCENTRATION AND BOARD INDEPENDENCE: EVIDENCE FROM MALAYSIA

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ABSTRACT

The study aimed to investigate the relationship between cash holdings and leverage of Malaysian companies. The present study also attempted to compare the relationship of cash holdings and leverage between sample of firms having low level of ownership concentration and high level of board independence (good corporate governance) and sample of firms that having high level of ownership concentration and low level of board independence (poor corporate governance). Leverage, cash flow variability, liquidity, growth, size and capital expenditure were used as corporate cash holdings determinants. The final sample of the study consisted of 276 companies with 875 observations from six main industries on the Main Board of Bursa Malaysia over a period of four years (2002 to 2005). Linear regression analysis was used to examine the relationship between cash holdings and leverage. The results show that there were significant negative relationships between cash holdings and leverage with or without control variables. The results also show that companies that had poor corporate governance held a higher level of cash compared to companies that practised good corporate governance.

Keywords: *cash holdings, ownership concentration, board independence, Malaysia*

Introduction

A company's policy on cash holdings affects its decision on corporate financing. A manager's decision on the amount of cash a company should hold is subject

to the need and benefits of holding it. Numerous corporate finance decisions, including dividend policy, risk management, and capital structure is impacted by the amount of cash which firms hold (Faulkender, 2004). Non-financial firms are observed to hold much more cash than their needs at a given point of time.[1] In a perfect Miller and Modligiani world of capital market, cash reserves are irrelevant for firms since external financing is a ready substitute for internal financing. Myers and Majluf (1984) were of the same opinion. They argued that if the capital market was perfect, there was no cost in holding cash. In reality, this is not the case because the capital market is imperfect. There are costs and benefits in cash holdings which are explained by the static trade-off model (Opler, Pinkowitz, Stulz and Williamson, 1999). Companies may reserve a certain amount of cash to meet their obligations when cash flows are inefficient. Furthermore, these cash reserves enable firms to finance projects showing a positive Net Present Value (NPV) when external financing is costly due to information asymmetry. Firms may hold cash as a precaution against possible periods of financial distress.

Although there are benefits in holdings large cash balances, there is also a growing concern that managers of cash-rich firms are subject to more severe agency problems than firms which are not cash-rich. Agency problems lead to an erosion of shareholders protection. As explained by the agency theory, such agency problems indicate poor corporate governance. Governance has an impact on cash holdings, that is, above and beyond the impact it has on the other assets (Ditmar and Smith, 2007). Likewise, research conducted by Guney, Ozkan and Ozkan (2006), also shows that corporate governance is important in explaining the corporate cash holdings behavior. According to Ditmar, Smith and Servaes (2003), there are great differences in cash holdings levels between countries that enjoy greater shareholders protection (countries that having good corporate governance) than those where shareholders' protection is lower (that is the countries that have poor governance).

Corporate governance mechanisms comprise elements which can be categorized into internal and external governance. According to Odgen, Jen and O'Connor (2003), internal governance mechanisms are inclusive of shareholdings or voting rights, board oversight and management hierarchy whereas external governance mechanisms include state of economy, resources, financial market and external governance groups. Ownership structure and board independence are often seen as the primary internal mechanism while takeovers and legal or regulatory system are often seen as the primary external mechanism (Denis and McConnell, 2002; Yu, 2006; Taylor and Liu, 2007). Large or concentrated ownership will raise potential agency problems as these large shareholders will expropriate the minority shareholders (La Porta, Lopez-De-Silanes, Shleifer, and Vishny, 1999; Claessens, Djankov, and Lang, 2000; Suto, 2003; Abdullah, 2006; Firth, Fung and Rui, 2007). Thus, having a large or concentrated ownership will result in the company having poor corporate governance. On the other hand, less concentrated and more dispersed ownership is good for the company and to some extent indicate good corporate governance practices. The higher the percentage of board independence or the greater the proportion of outside directors, the better the practice of corporate governance (Xie and Dadalt, 2003). One of the reasons is that outsiders with no affiliation with

firms other than their board seats can serve well as monitors (Yu, 2006). Based on these arguments, good governance is characterized by less concentrated ownership and high board independence whereas high concentrated ownership and low board independence illustrate poor governance practice.

Malaysian companies are characterized by high levels of ownership concentration and significant participation of owners in management (Claessens & Fan, 2002). A study by Abdullah (2006) indicates that the features which distinguish ownership structure between Malaysia and USA or UK, are the large and concentrated shareholdings by individuals and family. In the same study, Abdullah (2006) reported that on the average, 36% of the shares were held by a single largest shareholder. Large or concentrated ownership may become an issue when an expropriation of minority shareholders is involved. Several studies show that many publicly traded firms in East Asian countries have large shareholders in control (La Porta et al., 1999; Claessens et al., 2000) and this creates an opportunity for controlling shareholders to expropriate the minority shareholders (Hanazaki and Liu, 2007). In the absence of good corporate governance, and the combination of firm-level agency problems, the firms will have restricted access to external finance and tend to hold large cash reserves (Arslan, Flocrakis and Ozkan, 2006). According to Abdullah (2006), with the effective monitoring from the boards, agency problem can be avoided. The higher board independence, the greater the ability to discipline and monitor the executive directors and management (Ozkan and Ozkan, 2004; Kusnadi, 2006). This became the springboard for the main thrust of this study.

However, despite the relative magnitude and importance attributed to cash holdings by firms and investors, the role and effect of those cash holdings have not received wide attention in the academic literature. In most prior research, the focus was on the study of the determinants of cash holdings[2] or the relationship between cash holdings and corporate governance by comparing corporate governance among countries or investigating the effects of corporate governance on cash holdings.[3] Recent corporate governance studies conducted in Malaysia include, for example, Mohamed Ibrahim, Fatima and Nu Nu Htay (2006), Buniamin, Alrazi, Johari and Abd Rahman (2008), Che Haat, Abdul Rahman and Mahenthiran (2008), Wan Mohamad and Sulong (2010), Mohd Ghazali (2010), Darus and Mohamad (2011) and Ibrahim and Abdul Samad (2011). So far, to the researcher's best knowledge, there has been no published evidence that directly examines the relationship between cash holdings and leverage in Malaysia and also there is no evidence on the impact of corporate governance on this relationship. Hence, this study contributes to the gap of knowledge by looking at impact of corporate governance on the link between cash holdings and leverage. Furthermore, the way that the impact of corporate governance is examined is unique compared to the prior studies. Following the method that was been adopted by Hirota (1999), the sample of study was first divided into three different groups, i.e. the good, moderate and weak/poor governance. However, to examine the impact of corporate governance, only two contrasting samples were chosen which were the good and weak/poor governance. The sample of good governance companies was represented by firms which had lower ownership concentration and higher board independence and vice-versa and the sample of firms in good governance were given dummy 1, otherwise 0.

This variable was included in the regression of cash holdings against leverage. Using this approach, this study was able to observe the direct impact of good corporate governance on the relationship between cash holdings and leverage. The approach to the sample selection was considered distinctive because we could observe how the two contrasting governances measured in terms of ownership concentration and board independence had impacted the level cash holdings.

The results of the study show that cash holdings of Malaysian firms had a negative relationship with leverage. In other words, leverage can act as substitute for cash. In addition, the finding has identified that growth, cash flow variability and size form part of the determinants of cash holdings. The results also show that in a situation where firms had lower ownership concentration and higher board independence (represents good governance), the cash holdings were lower compared to firms with higher ownership concentration and lower board independence (represents weak governance). This is consistent to the argument of Jensen (1986) and also the agency cost of free cash flow theory which states that when managers have more free cash, they have the tendency to overspend on negative NPV projects. This implies that Malaysian companies which have good governance preferably keep lower level of the cash holdings compared to companies which have weak governance.

This paper is organized into five sections. Section 2 is a review of prior literature. This section also discusses the theoretical framework that governs the present study. Section 3 provides a detailed description of the methodology used in the study. Section 4 presents the findings. Section 5, gives a summary of the main findings and conclusions.

Literature Review

Cash Holdings and Leverage

Prior studies on cash holdings provide mixed evidence as to whether shareholders should feel concerned about the level of cash holdings held by a firm. For example, (Opler et al., 1999) argued that management accumulated cash for precautionary reasons. Mikkelson and Partch (2003) found that persistent extreme cash holdings did not lead to poor performance and did not represent conflicts of interests between managers and shareholders, evidence which is consistent with the idea that cash reserves enhance the value of the firm. In contrast, Harford (1999) stated that cash-rich firms would normally face value depreciation because their managers had the tendency to use excess cash to make acquisitions but those acquisitions might not add value to these companies. The acquisition might even affect a firm's values in a negative way.

As the internal funds increase from the large amount of cash holdings, leverage will decrease since firms want to avoid issuing costly equity (Nichols 2004). Firm will normally use their internal financing by either increasing cash or decreasing the amount of debt rather than relying on equity. In a study carried out by Opler et al. (1999), it was

argued that the variables that affected the cash holdings were also the same variables that affected leverage. Prior work on cash holdings has also identified that leverage plays a significant role in determining how much cash firms choose to hold (Guney et al., 2006). Since cash holdings and leverage can be affected by these same variables and leverage can act as a substitute for cash, it can be concluded that cash holdings and leverage are related to each other.

Several empirical studies carried out relating to cash holdings were more focused on the determinants of corporate cash holdings. For instance, Opler, Pinkowitz, Stulz and Williamson (1999) were among the earlier researchers who examined the determinants of cash holdings. They studied the determinants and implications of cash holdings amongst publicly traded US firms from 1971 to 1994. The study found that firms with stronger growth opportunities, higher business risks, and of smaller held more cash than firms which displayed these attributes to lesser degrees. Therefore, firms that have greater access to the capital market have higher credit ratings and highly levered firms tend to hold less cash. In addition, they also found that successful firms had a tendency to accumulate more cash. Similarly, Ozkan and Ozkan (2004) investigated the determinants of corporate cash holdings amongst publicly traded UK firms from 1984 to 1999. The studies were based on the same theoretical framework as Opler et al. (1999) employed, that is, the transaction cost motive and the precautionary motive. The researchers focused on the features of corporate governance which included the board structure and the ultimate controllers of the companies. As argued by Ozkan and Ozkan (2004), the United Kingdom (UK) had distinct corporate governance features because its corporate sector was characterized by insufficient external market discipline and a lack of sufficient monitoring by financial institutions and company boards. The study revealed that a firm's growth opportunities, cash flows, liquid assets, leverage and bank debts were important in determining cash holdings. Firera and Vilela (2004) investigated the determinants of corporate cash holdings in the European Management Union (EMU) countries, using a sample of publicly-traded firms from 1987 to 2000. They found that cash holdings were positively affected by investment opportunities available and the cash flows were negatively affected by asset liquidity, leverage and size of a firm. Their study also found a negative relationship between bank debt and cash holdings. They concluded that firms in countries with ownership concentration and superior investment protections measured by characters of legal rules and the quality of law enforcement had the tendency to hold less cash.

Another issue is the relationship between bank influence and cash holdings of firms. Pinkowitz and Williamson (2001) inspected the relationship between bank influence and cash holdings of firms in countries, namely, the United States (US), Germany and Japan. They studied data available for years between 1984 and 1994 and the firms considered were industrial firms. These countries were selected because there were primary differences among them with regards to practices of corporate governance which allowed comparison to be made between bank influence and cash holdings.[4] The researchers found that Japanese firms had the tendency to hold more cash than the US and German firms. One of the reasons was that the bank centered system in Japan and

the competition among banks was almost non-existent. From these results, the author concluded that Japanese banks persuaded firms to hold large cash balances. In contrast, Ozkan and Ozkan (2002) found that bank debt was negatively related to the level of cash held by firms in UK. They argued that bank financing was more effective in reducing agency conflict and information asymmetry problems. The strict screening and monitoring process conducted by the bank enhanced the ability of a firm to raise external finance. When a firm has easier access to external finance, it would be expected to hold less cash. According to Saddour (2006), leverage increases the discipline of the capital market. Thus, less leveraged firms can accumulate large amounts of cash without being subject to monitoring by capital markets. In addition, debt can be used to finance a firm's investment opportunities and can be seen as a cash substitute.

The level of cash held by a firm is also subjected to its financial status. For instance, when firms are under financial constraints, such as limited access to the capital market, they will normally accumulate cash and set up a specific level of optimum cash holdings as a precaution. The reason for this is that financially-constrained firms cannot raise sufficient funds to finance all future expected investment needs and may decide to hoard cash at a given time to fund future investments (Almeida, Campello, and Weisbach, 2002). Opler et al. (1999) found that firms with the best access to capital markets, such as, large firms and those with high credit ratings, had the tendency to hold lower ratios of cash to assets because they were the least financially constrained. On the contrary, financially-constrained firms normally face difficulties in obtaining external financing due to the high cost of acquiring debt; hence, they decide to hold a high level of cash. For financially-constrained firms, high cash reserves increase the ability of firms to undertake profitable investment opportunities (Arslan, Flockaris and Ozkan, 2006). Apart from using cash for the purpose of business operations and capital investments, cash is also held for the purpose of debt repayments. Therefore, debt acquisition may also increase the need to maintain a certain level of cash holdings. This indicates a positive relationship between cash holdings and leverage.

Although increasing a firm's debt standing through loan acquisition may increase its earnings by way of investing the loan, there is a possibility, through mismanagement of the loan and wrong investment; the company might be facing bankruptcy. Taking into considerations the fact that loans sometimes can be detrimental to the financial health of a firm, this matter is important to Malaysian firms. It can be discerned from the fact that Malaysian firms do acquire such debts to help their business operations and for further investments. In fact, local firms are very dependent on banks for these debts. A study by Suto (2003), showed how the tendency of firm to acquire debts beyond practical limits could cause the disaster breakdown of the whole commercial sector. In the study of the collapsing of the Malaysian banking system and currency crisis of 1997, she highlighted the fact that Malaysian firms were highly dependent of the banking system for continued survival. They had borrowed enthusiastically beyond their ability to repay the debts. Failure of the banks to call in these debts caused both a banking crises and corporate crises. In fact, it nearly brought the whole economic system in Malaysia to near complete collapse. The 1997 crisis was thus a powerful illustration of how debt acquisition by firm could destroy the borrowing firms. The study conducted by Guney et al. (2006),

examined the relationship between leverage and cash holdings of firms from France, Germany, Japan, UK and US over the period 1996 to 2000 ascertaining the determinants of cash holdings in the international context. Their arguments were based on the fact that if leverage could act as a substitute of cash holdings, a negative relationship between cash holdings and leverage was displayed. On the other hand, as leverage increased the cost of potential financial distress, potential bankruptcy cost would also increase. As a precautionary means against these potential costs, firms might choose to increase their cash balances and make the relationship between cash holdings and leverage a positive one. In addition, the authors found that impact of leverage on cash holdings partly depended on country-specific characteristics, such as, the degree of creditors' protection, shareholder's protection and ownership concentration. From the literature, we can thus see that there was a lack of evidence regarding the relationship between cash holdings and leverage of Malaysian firms. This led to our first objective of the study which was to examine the relationship between cash and leverage and also to observe if leverage could be a substitute of cash.

Cash Holdings and Corporate Governance

The agency problem is rooted in the management's incentive to retain and use wealth (e.g., cash) under their control within the firm (Jensen, 1986) versus investors' desire to maximize the individual shareholder's wealth (Swanson, 2006). The study conducted by Ferreira and Villella (2004) explained on the relationship between large or concentrated shareholdings and legal protection. Their arguments show that in the West, large or concentrated shareholdings are viewed as a substitute for legal protection and can effectively monitor managers and mitigate managerial agency costs. However, conflict of interests between corporate insiders, namely, managers and controlling shareholders and outside investors can create agency problems (Guney et al., 2006).[5] According to Hanazaki and Liu (2007) in the West, ownership concentration is an indication of good corporate governance as it can mitigate the agency problems. This theory does not hold for firms in the East Asian countries. Compared to the firms in the West, firms in the East Asian countries, large or concentrated shareholdings are an indication of poor corporate governance (Abdullah, 2006). If the company is controlled by large or concentrated shareholdings, the major shareholders will have a strong influence on management and management will act against the minority shareholders' interest (Park et al., 2004; Ozkan and Ozkan, 2004; Firth et al., 2007).

Apart from ownership concentration, board independence has been given special attention as it can affect the corporate governance effectiveness. One of the studies conducted by Hermalin and Weisbach (2001) shows that having a higher proportion of independent directors on board is associated with better decision making. According to Taylor and Liu (2007), the proportion of independent directors on a board influences the independence of the board, the transparency of annual reporting, the amount of executive compensation and the effectiveness of corporate governance.

Researchers have emphasized the influence of corporate governance on the level of cash held by a firm. Firms with poor corporate governance have higher agency cost and

limited access to external finance funds; therefore they are more likely to accumulate cash (La Porta et al., 1997; Guney et al., 2006). Governance influences the cash policy through the decision to spend the excess cash, not through the decision to accumulate cash (Ditmar and Smith, 2007). Another researcher who studied the corporate cash holdings and corporate governance mechanism is Kusnadi (2003). Kusnadi (2003) used public-listed companies in Singapore as his sample. The findings show that board size and non-management blockholder ownership are significantly related to the ratio of cash to net assets. The relationship between board size and cash holdings was found to be positive while the relationship between non-management blockholder ownership and cash holdings was negative. This result supports the agency cost theory and implies that firms with large boards and low non-management blockholders ownership are normally poorly governed. Therefore, shareholders of such firms do not have much power to force the managers to channel excess cash to them. A study by Ditmar et al. (2003) show that corporations in countries where shareholders' rights are not well-protected hold twice as much cash as corporations in countries that provide adequate shareholders' protection. The data for the study were drawn from 11,000 firms from 45 countries in 1998. The study incorporated the elements of corporate governance besides emphasis on the determinants of cash holdings. In addition, the researchers also found that in countries that had poor shareholders protection, factors that underlined the need of cash holdings, such as, investment opportunities and asymmetric information became less important. Cash holdings are normally maintained for the purpose of investment and to prevent insufficient cash due to asymmetric information problems. However, agency problems arise in countries that have poor corporate governance as shareholders are sometimes unable to force the managers to disgorge excessive cash balances.

Harford (1999) and Harford, Mansi and Maxwell (2005) examined the relationship between cash holdings and corporate governance including anti-takeover decision and their findings show that poorly-governed firms dissipated cash more quickly than well-governed firms through acquisitions. Ditmar and Smith (2007) extended the focus of the relationship between cash holdings and corporate governance by investigating corporate governance and the value of cash holdings using US publicly traded firms from 1990 to 2003. From their observation, they found that good governance doubled a firm's value compared to the value change in poorly-governed firms. Furthermore, the results show that firms with poor corporate governance dissipated cash more quickly in ways that significantly reduced operating performance compared to firms that had good corporate governance. Due to the availability of extra cash, managements were able to squander the money on bad acquisitions and they took on projects that were deemed to have negative Net Present Value (NPV). Hence, good governance is important tool to manage cash.

In this section we discuss related corporate governance studies that have been conducted in Malaysia. For example, Mohamed Ibrahim, Fatima and Nu Nu Htay (2006) examined the relationship of corporate governance and performance by doing a comparative study on Syariah approved and non-Syariah approved firms listed on Bursa Malaysia.They found little differences between the two categories of firms. Buniamin, Alrazi, Johari and Abd Rahman (2008) examined the relationship between corporate governance and environmental reporting of Malaysian firms. They found that board size had significant

relationship with environmental reporting. Che Haat, Abdul Rahman and Mahenthiran (2008) found evidence of debt monitoring and foreign ownership influencing corporate performance of Malaysian firms but disclosure and timeliness of reporting did not contribute to the firm performance. Wan Mohamad and Sulong (2010) found evidence that, Malaysian companies with higher percentage of family members on the board had significant lower disclosure in their annual reports. Mohd Ghazali (2010) examined the impact of ownership, board size and board independence on the corporate performance of Malaysian firms. They found that the government as substantial ownership and foreign ownership influenced the corporate performance. Darus and Mohamad (2011) using samples of Malaysian financial distressed firms found evidence that leadership structure affected corporate performance but the internal control mechanisms, such as, Audit Committee Independence and Expertise failed in mitigating financial distress conditions of firms. Ibrahim and Abdul Samad (2011) examined the relationship of corporate governance mechanisms and performance between family and non-family ownership of public listed firms in Malaysia. They found that regardless of the type of ownership; it had strong influence on firm performance. Clearly, there was a lack of evidence of studies that studied the effect of corporate governance on cash holdings. Hence, the second objective of studied was to examine the impact of the corporate governance on the relationship of cash holdings and leverage of Malaysian firms.

Theoretical Framework and the Motives of Holding Cash

According to Opler et al. (1999), there are three theories on why companies hold high levels of cash. These are the static trade-off theory, the free cash flow theory and the pecking order or financing hierarchy theory. We will explain the three theories, however, the theory that will be used to explain the result of our study is the agency cost of free cash flow theory.

Static Trade-off Theory

This theory hypothesizes that firms when deciding on how much cash to keep, execute a trade-off between various costs and benefits of debt financing (Ditmar et al., 2003). The cost of holding cash mainly comes from the opportunity cost of capital due to the low returns on liquid assets. According to Fereira and Vilela (2004), in general, there are three marginal benefits for holding cash. Firstly, it reduces the likelihood of financial distress. Secondly, it allows a firm to pursue investment opportunities. Thirdly, it minimizes the cost of raising external funds or liquidating existing assets. The benefits of holding cash are derived from two types of motives, namely, the transaction cost motives and the precautionary motives. The transaction cost motive advocates that the transaction motive for a company to hold cash arises from the cost of converting cash substitutes into cash. The precautionary motives to hold cash are based on information asymmetries, agency cost of debt, and liquid asset holdings.

Free Cash Flow Theories

This theory was propounded by Jensen and Meckling (1976). It postulates that, in the presence of agency cost of managerial discretion, managements may hold cash to pursue

its own objectives at the shareholders' expense. Three reasons are provided to explain why managements hold large cash balances or why agency cost is incurred. The first reason is risk aversion. Managements which are risk-averse tend to hold large amounts of cash as a buffer against any uncertainties that might develop in the future. Second, managements may accumulate cash to allow themselves more flexibility in pursuing their own objectives. Third, managements may accumulate cash because they do not make a dividend payout to shareholders and prefer to keep the funds within the firm.[6]

According to Jensen (1986), when managers have more free cash flows at their disposal, they are likely to over-invest in negative NPV projects at the expense of the shareholders or consume more discretionary perquisites which provide private benefits. The issue of large cash holdings may create agency problems by which managers might abuse the power given them. Hence, corporate governance is an essential tool to manage this agency problem. Several studies have found that corporate governance represented by shareholders' rights, board structures; ownership concentration and managerial ownership are significantly correlated to cash holdings (Opler et al., 1999; Ditmar et al., 2003; Kusnadi, 2003; Ozkan and Ozkan, 2004; and Guney et al., 2006). Their findings are consistent with the agency cost of free cash flow theory which propounds that in the presence of agency cost (via good corporate governance), managements would least likely abuse their power in cash holdings. Ditmar and Smith (2007) found that good corporate governance would prevent abuse of power by managers which would systematically increased the value of cash holdings whereas poor corporate governance would destroy the firm's values.

In this study, we examined how governance via ownership and board independence could be used to mitigate the agency cost of free cash flow i.e. reducing the cash holdings of company.

Financing Hierarchy Theory/Pecking Order Theory

Financing theories suggest that there was no optimal level of cash (Ditmar et al., 2003). Cash balances are the outcomes of firm profitability and financing needs. An underlying assumption of this theory is that firms find equity expensive due to information asymmetries. Therefore, a firm would not raise finance in the form of equity. A firm would normally sell debt when it has insufficient funds. If they have sufficient funds, firms will use the funds to invest in profitable projects available, make repayment for assets that become due or accumulate liquid assets. This theory presumes that debts and cash increase simultaneously as the firm has more funds at its disposal. In other words, there is no plan to hold a certain level of cash.

Research Design and Hypothesis Development

Hypotheses Development

The first objective of this study was to examine whether leverage had a significant impact on cash holdings by examining the relationship that existed between cash holdings and

leverage. Prior studies show evidence that there was in existence a relationship between the cash holdings and leverage. Some of them showed a positive relationship whereas others contradicted with those results. However, most of the studies showed a negative result, in other words, when firms had large amount of cash, leverage would decrease. This relationship stands because cash holdings and leverage are affected by the same variable and leverage can be a substitute for cash. Thus, based on the empirical evidence from prior studies, Hypothesis 1 was developed as follows:

H^1: There is an increase in the level of cash holdings when the level of leverage decreases.

The second objective was to observe the impact of corporate governance on the relationship between cash holdings and leverage. Corporate governance which is represented by ownership concentration and board independence are important in explaining the cash holdings behavior (Ditmar and Smith, 2007; Guney et al., 2006; Ozkan and Ozkan, 2004; Kusnadi, 2006). In this study, good governance was represented by firms with lower level of ownership concentration and a higher level of board independence and weak governance was referred to firms that had a higher level of ownership concentration and a lower level of board independence. Accordingly, Hypothesis 2 was developed as follows.

H^2: There is a difference in the relationship of cash holdings and leverage for firms with a low level of ownership concentration and high level of board independence (good governance) and those that have a high level of ownership concentration and low level of board independence (weak governance).

Data Collection and Sample Selection

In order to examine the impact of corporate governance on cash holdings, the sample for a period of four years from 2002 to 2005[7] was selected based on two critical variables of corporate governance, that is, ownership concentration and board independence. As mentioned earlier, good corporate governance was represented by less concentrated shareholdings and a high degree of board independence (Xie et al., 2003; Abdullah, 2006) and poor corporate governance was represented by large or concentrated shareholdings and low degree of board independence (Claessens et al., 2000; La Porta et al., 1999; Suto, 2003; Abdullah, 2006; Firth et al., 2007). From these two variables, the four criteria used in the sample selection were Top 1, Top 5, Top 10 *less* than the average mean of the sample and board independence *more* than the average mean of the sample.[8] If the firm fulfilled three or four of the criteria, it was classified as *good* corporate governance. If the firm fulfilled only two of the criteria, it was classified as *moderate*. Lastly, a firm that fulfilled only one or none at all was considered as practicing *poor* corporate governance. To examine the impact of corporate governance on cash holdings, the sample of *good* and *poor* corporate governance category was used.

The final sample was determined after eliminating the companies that were deemed to possess insufficient data. The final sample was divided into two categories, namely, companies with low levels of ownership concentration and high levels of board

independence (good governance) and those with high levels of ownership concentration and low levels of board independence (poor governance). The sampling frame consisted of 276 companies with 875 observations from six different sectors, namely, the trading and services sector, the industrial products sector, the consumer products sector, the construction sector, the plantation sector and the properties sector. All of these companies were listed under the main board of Bursa Malaysia. The final sample was reviewed by applying two tests. First, to analyze the characteristic of cash holdings and leverage, a regression test was conducted to establish the possible relationship between cash holdings and leverage. The second analysis was to compare the cash holdings between companies with a low level of ownership concentration and high level of board independence (good governance) to those with a high level of ownership concentration and a low level of board independence (poor governance).

Variables and its Measurements

Cash Holdings

The dependent variable in this study was cash holdings. A firm's current cash holdings is the cumulative result of its past operating and financial performance and of events that are at least partially beyond management control that affect liquidity. The definitions of cash or cash holdings differ from study to study. Williamson and Pinkowitz (2001) define cash holdings only as cash in hand whereas in the case of Ditmar et al. (2003), the definition of cash holdings is the sum of cash, deposits and marketable securities that the firm has in possession at a given time. This study used two definitions of cash. CASH 1 measured using cash and cash equivalents to total asset ratios (Ditmar et al., 2003). CASH 2 measured using cash and cash equivalents to net asset ratios, where net asset was computed as book value of assets less cash and cash equivalents (Ferreira and Vilela, 2004).

Leverage

'Leverage' as applied to this study referred to financial leverage. Financial leverage takes the form of a loan or other borrowings (debt), the proceeds of which are reinvested with the intent to earn a greater rate of return than the cost of interest. Leverage increases the returns of an investment with the caveat that the greater the debt the greater the risk taken. The risks involved include financial distress and bankruptcy. According to Opler et al. (1999), leverage is measured as the ratio of total debt divided by total assets less cash and cash equivalents.

Firm Specific Characteristics that Influence Cash Holdings Decision

Each firm differs in terms of characteristics, such as, the phase of growth, cash flow variability, its size, its liquidity and capital expenditure. This will act as control variables to the cash holdings decisions. Guney et al. (2006) measure growth by taking the ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of assets. Growth is expected to have a positive relationship with cash.

According to Kim Mauer and Sherman (1998), cash flows provide a ready source of liquidity. As for the case of cash variability, Ferreira and Vilela (2004), state that firms with more volatile cash flows face a higher probability of cash shortages due to unexpected cash flow deterioration. Thus, cash flow uncertainties should be positively related to cash holdings. Cash flow variability is represented by the standard deviation of cash flows divided by total assets (Guney et al., 2006).

It is argued that larger firms are more likely to be diversified and thus less likely to experience financial distress and smaller firms face more borrowing constraints and higher costs of external financing than larger firms (Guney et al., 2006). Therefore, it suggests a negative relationship between size and cash holdings of firms. According to Guney et al. (2006), the natural logarithm of total sales is used as a proxy for the size of firms (SIZE). To reduce the effect of heteroscedoscity, natural logarithm is applied to the sales figure (Yu, 2006).

The ratio of net working capital minus cash to total assets (LIQUIDITY) is used as a proxy for liquid asset substitutes and a negative relationship is expected because liquid assets can be seen as a substitute for cash in the event of a cash shortage (Ferreira and Vilela, 2004).

Similar to other studies, capital expenditures of firms (see, for example, Opler et al., 1999 and Dittmar et al., 2003) will be used. To control for the possibility that the firm's cash holding policy is simply a function of its capital expenditures, the ratio of capital expenditures to total assets, CAPEX, is included (Opler et al., 1999).

This study examined firms from six industries i.e. construction, consumer products, industrial products, plantation, properties and trading and services. In order to control for industry effects dummy variables for the different industries were included. Each industry has its own characteristic. Certain industries' earnings are highly volatile and are of high risk. This will affect the cash holdings decision indirectly. In this study the control group was Trading and Services.

Ownership Concentration and Board Independence

The variables and measurements of corporate governance criteria were adapted from Yu (2006). The internal governance mechanism, which is the ownership concentration, was represented by three variables, namely, Top 1, Top 5 and Top 10 shareholders. Top 1 represented the percentage hold by the largest shareholders, Top 5 was the aggregate percentage of the top five shareholdings and Top 10 was the aggregate percentage of the top ten shareholdings. One important aspect of board structure was board independence. According to Yu (2006), board independence is commonly viewed as the crucial factor protecting the interest of shareholders since outsiders with no affiliation with firms other than their board seats can serve well as monitors. In this study, these variables were measured in terms of the proportion of independent directors over the total board of directors. To incorporate the elements of ownership concentration and board independence in the study corporate governance (CG), dummy of 1 was assigned to companies that

practiced *good* corporate governance and 0 was attributed given to companies that having *poor* corporate governance.

A summary of the definitions of the variables are given in Table 1 below.

Table 1: Measurement of Variables

Variable	Definition
Cash 1 (CASH 1)	The ratio of cash and equivalents to total assets.
Cash 2 (CASH 2)	The ratio of cash and equivalents to net assets. Net asset is the book value of asset less cash and equivalents.
Leverage (LEV)	The ratio of total debt to total assets.
Growth (MTBV)	The ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of assets.
Cash flow Variability (VARIABILITY)	Represented by the standard deviation of cash flows divided by total assets.
Size (SIZE)	The natural logarithm of total sales as a proxy for the size of firms.
Liquidity (LIQUIDITY)	The ratio of net working capital minus cash to total assets.
Capital Expenditure (CAPEX)	The ratio of capital expenditures to total assets.
Ownership Concentration	The summing of percentage held by Top 1, Top 5 and Top 10 shareholders.
TOP 1	The percentage of top 1 shareholding.
TOP 5	The aggregate percentage of the first top 5 shareholdings.
TOP 10	The aggregate percentage of the first top 10 shareholdings.
Board independence (BOARD IND)	The proportion of independent directors over the total board of directors
Construction C	Equals 1 if true, 0 otherwise
Consumer products CP	Equals 1 if true, 0 otherwise
Industrial products IP	Equals 1 if true, 0 otherwise
Plantation P	Equals 1 if true, 0 otherwise
Properties N	Equals 1 if true, 0 otherwise
Trading and services	Control group

The Regression Model

The model used in this study was based on the regression model of Guney et al. (2006).

$$CASH = \beta_0 + \beta_1 LEV_{it} + \beta_2 MTBV_{it} + \beta_3 VARIABILITY_{it} + \beta_4 SIZE_{it} +$$
$$(-) \qquad (+) \qquad (+) \qquad (-)$$
$$\beta_5 LIQUIDITY_{it} + \beta_6 CAPEX_{it} + DUMMIES + \varepsilon_{it}$$
$$(-) \qquad (+)$$

where

CASH = CASH 1 = The ratio of cash and equivalents to total assets.

          CASH 2 = The ratio of cash and equivalents to net assets. Net asset is the book value of asset less cash and equivalents.

LEV_{it} = The ratio of total debt to total assets.

$MTBV_{it}$ = The ratio of book value of total assets minus the book value of equity plus the market value of equity to book value of assets.

$VARIABILITY_{it}$ = Represented by the standard deviation of cash flows divided by total assets.

$SIZE_{it}$ = The natural logarithm of total sales as a proxy for the size of firms.

$LIQUIDITY_{it}$ = The ratio of net working capital minus cash to total assets.

$CAPEX_{it}$ = The ratio of capital expenditures to total assets.

DUMMIES = Industry dummies and corporate governance dummy

The predicted signs revealed in equation represent the predicted relationship which exists between each variable and cash holdings. In order to test the hypothesis, multiple regression models as stated in Model 1 to 4 were employed to examine the relationship between cash holdings (CASH 1 and CASH 2) and leverage. Model 1 and Model 3 were used to regress the relationship between the dependent variables (CASH 1 and CASH 2) and the independent variable (LEV) with the industry dummies and CG dummy whereas model 2 and model 4 were used to regress the dependent variables (CASH 1 and CASH 2) against the independent variable (LEV), control variable, the industry dummies and the CG dummy. Inclusion of the control variables and industry and the CG dummy provided strength of explanatory power and a degree of predictive accuracy of the independent variables which helped to explain the variations in the dependent variables. The regression models are as follows:

Model 1:

$$CASH\ 1\ =\ \beta_0 + \beta_1 LEV_{it} + DUMMIES + \varepsilon_{it}$$

Model 2:

$$CASH\ 1\ =\ \beta_0 + \beta_1 LEV_{it} + \beta_2 MTBV_{it} + \beta_3 VARIABILITY_{it} + \beta_4 SIZE_{it} + \beta_5 LIQUIDITY_{it} + \beta_6 CAPEX_{it} + DUMMIES + \varepsilon_{it}$$

Model 3:

$$CASH\ 2\ =\ \beta_0 + \beta_1 LEV_{it} + DUMMIES + \varepsilon_{it}$$

Model 4:

$$CASH\ 2\ =\ \beta_0 + \beta_1 LEV_{it} + \beta_2 MTBV_{it} + \beta_3 VARIABILITY_{it} + \beta_4 SIZE_{it} + \beta_5 LIQUIDITY_{it} + \beta_6 CAPEX_{it} + DUMMIES + \varepsilon_{it}$$

To test the hypothesis, the acceptance or rejection would depend on the t-statistic of leverage for all the models. If the t-statistic of leverage was significant and negative, hypothesis 1 would be accepted, otherwise it would be rejected. Acceptance of hypothesis 1 would imply that there was a significant negative relationship between cash holdings

and leverage. In the case of hypothesis 2, if the t-statistic value of CG dummy was significant, this would imply that there was a difference in the level of cash holdings between companies with low level of ownership concentration and high level of board independence (good governance) and those with high level of ownership concentration and low level of board independence (poor governance). On the other hand, if the result of the CG dummy was insignificant, it would indicated that there was no difference in the level of cash holdings between companies good governance and those poor governance.

Findings and Results

Composition of the Sample

The Table 2 represents the number and the percentage of the observations of the companies in the sample according to their industries. Most of the observations were derived from the trading and services industry with 226 observations (25.83%), followed by industrial products with 203 observations (23.20%) and properties with 197 observations (22.52%). Smallest number of observations was made on the plantation industry, that is, only 68 (7.77%), as compared to construction (8.11%) and consumer products (12.57%).

Table 2: Composition of the Sample

Panel A: Composition of the observations for pooled sample according to the industries

No.	Industry	No. of Observations	Percentage
1	Construction	71	8.11
2	Consumer Products	110	12.57
3	Industrial Products	203	23.20
4	Plantation	68	7.77
5	Properties	197	22.52
6	Trading and Services	226	25.83
	Total	875	100

Descriptive Statistics

The characteristics of the variables for the full sample (Table 3) are represented in the descriptive statistics. The means for all the variables were positive, which is consistent with prior studies (Guney et al., 2006; Ozkan and Ozkan, 2004). On the average, Malaysia firms held cash, CASH 1 and CASH 2 which consisted of 9.6% of total assets and 11.7% of their net assets, respectively, with leverage (LEV) 25.7%, market to book value (MTBV) of 0.91 and spent about 3.3% of their total assets on capital expenditures (CAPEX). Other than that, cashflow variability (VARIABILITY) was 4.5% and these companies held liquid assets (LIQUIDITY) making up 5.7% of their total assets. The percentage of cash that Malaysian firms held did not differ much from the UK, US, France and Germany (Guney et al., 2006). The low level of cash held due to the high proportion of leverage

within the companies. This situation indicates that leverage may act as a substitute of cash. Apart from that, companies that hold low levels of cash may reflect the reduced incentive for firms to accumulate cash when they have relatively easy access to capital markets (Guney et al., 2006).

Cash holding within the companies varied from 1% of total asset to 38.4% of net asset for CASH 1 and from 1% to 62.3% of net assets for CASH 2. From Table 3, the highest percentage of leverage over the total assets (LEV) was 89.3%. Growth (MTBV) for each of the companies was different ranging from negative (-0.080) to positive (3.180). The cash flow VARIABILITY varied from the lowest that was 0% to the highest 19.4%. For SIZE, it varied from log sales of 8.216 to 16.690. For LIQUIDITY, the range was from negative -49.9% to positive 62.6% of its total assets. Some of the companies had no capital expenditure for the respective years whereas some companies had as high as 14.9% of their fixed assets allocated to capital expenditures.

The standard deviation for the variables varied from the lowest, that was CAPEX (0.034) to the highest, that is SIZE (1.269). From the table we can see that the volatility of the dependent variables, that is CASH (CASH 1, 0.084; CASH 2, 0.121) was lower compared to LEV (0.181). Besides this, the results in Table 3 also indicate that the standard deviation of VARIABILITY and CAPEX were lower than LEV. The standard deviation for MTBV, SIZE and LIQUIDITY were significantly higher than LEV.

Table 3: Descriptive Statistics

	N	MEAN	MIN	MAX	STD DEV
CASH 1	875	0.096	0.001	0.384	0.084
CASH 2	875	0.117	0.001	0.623	0.121
LEV	875	0.257	0.000	0.893	0.181
MTBV	875	0.910	-0.080	3.180	0.534
VARIABILITY	875	0.045	0.000	0.194	0.038
SIZE	875	12.505	8.216	16.690	1.269
LIQUIDITY	875	0.057	-0.499	0.626	0.184
CAPEX	875	0.033	0.000	0.149	0.034

The samples consists of 875 observations from year 2002 to year 2005

T-test Results of the Sample

An independent t-test was conducted to show that this study used two sets of samples, that is companies with low level of ownership concentration and high level of board independence (good corporate governance) and companies that had high level of ownership concentration and low level of board independence (poor corporate governance). Table 4 shows the results of the compared means. The table reveals that the means of ownership concentration (TOP1, TOP5, and TOP10) were significantly different between good corporate governance sample companies (17.43%, 39.35%, 50.53%, respectively) and

poor corporate governance sample companies (43.55%, 69.25%, 76.89%, respectively). Low ownership concentration indicates a practice of good corporate governance and such high ownership concentration might have important implications on agency problem (Guney et al., 2006). On the other hand, the mean of board independence (BOARD IND) for good corporate governance companies (42.83%) was statistically higher compared to poor corporate governance companies (39.30%) because if the board is more independent, it provides an effective tool in monitoring managers and overcome the agency problem.

The mean for the dependent variables (CASH 1 and CASH 2) between companies that practised good corporate governance was significantly lower than companies that had poor corporate governance. In contrast, the level of leverage (LEV) held by poor corporate governance companies was less than that of good corporate governance companies. This finding is consistent with the study of Ditmar et al. (2003) and Guney et al. (2006), which illustrates that poorly-governed firms normally have a larger amount of cash. On the other hand, this finding contradicts with the free cash flow hypothesis of Jensen and Meckling (1986) that high ownership concentrations are expected to hold less cash. In addition to that, poorly-governed firms normally have difficulties in obtaining outside financing because of strict regulations imposed. Therefore, poorly-governed firms normally hold smaller amount of leverage. This shows that cash and leverage do have a negative relationship, that when a company holds a high amount of cash, they will lower the amount of leverage.

In conclusion, this test verified that there were two different set of samples used in this study, that is companies with good corporate governance and companies with poor corporate governance.

Table 4: T-Test Results of Ownership Concentration, Board Independence, Cash and Leverage

	N	TOP 1	TOP 5	TOP 10	BOARD IND	CASH 1	CASH 2	LEV
GOOD GOVERNANCE-	470	17.430	39.347	50.530	42.829	0.088	0.102	0.290
POOR GOVERNANCE-	405	43.550	69.254	76.886	39.304	0.106	0.134	0.218
DIFFERENCES		-32.815***	-42.524***	-37.782***	4.643***	-3.238***	-3.994***	5.950***
P value		(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)

The samples consist of 875 observations from year 2002 to year 2005. Significant at 1% level ***

The Regression Results

The main objective in this study was to investigate the relationship of CASH 1 and CASH 2 with LEV and its control variables. In addition, this study also addressed the

difference in the level of cash holdings between companies that practised good corporate governance and companies that had poor corporate governance.

The Regression Results for the Relationship between Cash holdings and Leverage

Based on the results in Table 5, there was strong evidence to suggest that cash holdings and leverage was negatively related. This can be seen in the results for all the four models. These findings are consistent with (Guney et al., 2006; Ferreira and Vilela, 2004; and Opler et al., 1999) who affirmed that negative relationship implies that leverage can act as a substitute of cash holdings. Therefore, the findings did not reject the H1 which held that there was a significant negative relationship between cash holdings and leverage.

From the results, the determinants of cash holdings in Malaysia can be identified. Among the five control variables, we observe that GROWTH, VARIABILITY and SIZE influenced the cash holdings; LIQUIDITY and CAPEX did not seem to have significant impact on cash holdings. Except for SIZE, all the determinants of cash holdings followed the expected signs. Size was expected to be negatively related to cash holdings whereas the result shows a positive sign. This can be interpreted to indicate that the larger the company, the larger the amount of cash that the company holds.

The adjusted R-squared of Model 2 (19.9%) and Model 4 (18.9%) which is inclusive of the control variables was better than Model 1 (10.7%) and Model 3 (10.5%). This implies that Model 2 and Model 4 have a better explanatory power on cash holdings. Furthermore, compared to some of the previous studies, the adjusted R-squared for this study seemed to be better. Guney et al. (2006), in their study recorded an adjusted R-squared, ranged from the lowest country, that is Germany (10%) to the highest, that is, US (30%). Another study was by Ditmar et al. (2007), where the findings show an adjusted R-squared ranging from 14% to 18%.

Difference in the Level of Cash Holdings Between Companies with a Low Level of Ownership Concentration and a High Level of Board Independence and Those with a High Level of Ownership Concentration and a Low Level of Board Independence

The result of the dummy for CG in all the four models show that there was a significant difference in the level of cash holdings between companies with a low level of ownership concentration and a high level of board independence and those with a high level of ownership concentration and a low level of board independence. Therefore, this finding supported Hypothesis 2 that: there is a significant difference in the level of cash holdings between companies with low level of ownership concentration and high level of board independence and those with high levels of ownership concentration and low levels of board independence. Moreover, the results show that companies with high levels of ownership concentration and low levels of board independence held higher cash levels than companies with low levels of ownership concentration and high levels of board independence. This was explained by a negative sign in CG dummy. This shows that low levels of ownership concentration and high levels of board independence companies held less cash compared to those with high levels of ownership concentration and low levels

Table 5: The Regression Results of Cash Holdings, Leverage and Control Variables

	CASH 1		CASH 2	
	Model 1	Model 2	Model 3	Model 4
CONSTANT	20.490***	-1.583***	18.568***	-1.681*
	(0.000)	(0.114)	(0.000)	(-0.093)
LEVERAGE	-5.558***	-4.783***	-5.483***	-4.862***
	(0.000)	0.000	(0.000)	(0.000)
GROWTH	-	2.938***	-	2.608***
		(0.003)		(0.009)
VARIABILITY	-	7.832***	-	7.606***
		(0.000)		(0.000)
SIZE	-	4.687***	-	4.445***
		(0.000)		(0.000)
LIQUIDITY	-	-0.650	-	-1.044
		(0.516)		(0.297)
CAPEX	-	1.333*	-	1.239
		(0.183)		(0.216)
DUMMY CG 1	-2.628***	-1.722*	-3.409***	-2.529***
	(0.009)	(0.085)	(0.001)	(0.012)
DUMMY IP	-2.685***	-1.584*	-2.619***	-1.536*
	(0.007)	(0.114)	(0.009)	(0.125)
DUMMY CP	-2.774***	-0.933	-2.i630***	-0.903
	(0.006)	(0.321)	(0.009)	('0.367)
DUMMY P	-5.747***	-1.763*	-5.245***	-1.511*
	(0.000)	(0.078)	(0.000)	(0.131)
DUMMY N	-5.017***	-3.523**	-4.895***	-3.520***
	(0.000)	(0.000)	(0.000)	(0.000)
DUMMY C	3.197***	4.244***	3.106***	4.131***
	(0.001)	(0.000)	0.002	(0.000)
OBSERVATIONS	875	875	875	875
F-STATISTIC	16.011	19.040	15.662	17.989
ADJUSTED R2	0.107	0.199	0.105	0.189

The samples consist of 875 observations from year 2002 to year 2005
Significant at 10% level *
Significant at 5% level **
Significant at 1% level ***

of board independence companies. This result is consistent with the findings in Table 2, which show that the levels of cash holdings were different between the two types of companies. This result is consistent with Ditmar et al. (2006), who concluded that there

was a difference in cash holdings between countries that had good corporate governance and countries that had poor corporate governance.

Summary and Conclusion

Some prior studies have found a significant relationship between cash holdings and leverage. The relationship between the two variables can be either positive or negative. So far, only one of the studies represents an in-depth investigation of the relationship between cash holdings and leverage, that is, the study of Guney et al. (2006). Other studies in this area merely used leverage as their control variables and it was not given serious attention (Opler et al., 1999; Ditmar et al., 2003; Kusnadi, 2003; Ozkan and Ozkan, 2004; and Ditmar and Smith, 2007). Ditmar et al. (2003), provided empirical evidence on the importance of corporate governance in cash holdings by comparing cash holdings across countries. Guney et al. (2006) also conducted the study which incorporated elements of corporate governance and made comparisons across countries. Both of the studies provided evidence that countries which had poor corporate governance held cash at higher levels compared to countries that had good corporate governance.

In the case of Malaysia, there seems to be no similar studies which focus on the relationship between cash holdings and leverage; or to make comparisons on cash holdings between companies that practice good corporate governance and companies that have poor corporate governance. Hence, this study was conducted to examine these issues based on 875 companies from six (6) main industries in the Main Board of Bursa Malaysia and with the data used covering the years from 2002 to year 2005.

The results of this study show that there was a significant negative relationship between cash holdings and leverage. The significant negative relationship implies that leverage can act as a substitute of cash holdings and exert an impact on the firm's cash holding decisions. In addition, the finding has identified that growth, cash flow variability and size form part of the determinants of cash holdings. The findings also show that different corporate governance practices can influence the cash policies of a firm. The findings show that companies with good corporate governance normally hold cash at much lower levels than companies that have poor corporate governance.

The study was carried out in as robust a manner as possible to ensure that its objectives were successfully achieved. However, the study had several limitations. Among the limitations were the missing values in the data derived from the annual report and DataStream, the sample size and the sample period. The sample size of the study was rather small (276 companies with 875 observations) compared to other international studies, such as, Guney et al. (2006) which used 4,069 firms and incorporated of 20,353 observations. In addition, the sample period was rather limited as it covered only four years compared to the study conducted by Ditmar et al. (2003) which covered 10 years. Other than that, the data were not normally distributed. However the models used had reported to be appropriate. Another limitation of the study was the scoring system used to evaluate the corporate governance. The score allocation was based on four categories, namely, the

Top 1, Top 5, and Top 10 of the shareholders and the proportion of independent directors to the total number of directors. The scoring system needed further refinement.

In addition to what that was investigated in the present research, there are several other avenues to be explored in future research regarding cash holdings, leverage and corporate governance. Such future research could incorporate other elements of corporate governance, such as, blockholders as part of the variables used in the scoring system. The period studied was until 2005 and future research may examine the efficacy of the corporate governance reforms since 2007. Furthermore, research in the future should investigate the relationship between cash holdings and corporate governance, where the corporate governance elements (for example, TOP1, TOP 5 and Board Independence) are considered as independent variables rather than being grouped into a dummy. Lastly, given the extensive government involvement in the corporate sector, it is suggested that this study be extended to examine whether the behavior of government link companies (GLCs) differs from that of non-GLCs. In short, the potential for further research of impact of corporate governance on cash holdings is great as there is a lack of such research, especially in the local context.

Notes

[1]   For example, Harford (1999) indicated that 25 percent of the largest US non-financial corporations held an average of eight percent of their assets in cash reserves, citing that 'cash represents 20 percent or more of the equity values of many well–known companies, such as IBM and Chrysler'.

[2]   See for example, Opler et al. (1999), Fereura and Vilela (2004), Ozkan and Ozkan, (2004) and Guney, Ozkan and Ozkan (2006), etc.

[3]   See for example, Ditmar et al. (2003), Kusnadi (2003) and Harford et al. (2005).

[4]   Noting that in the United States, the capital market is the main monitor of financial discipline among leveraged industrial firms while the Japanese main loaning bank acted as the primary monitor and 'disciplinarian' of the firm. Bank power in Japan enables the main bank to act as principal monitor with a monopoly power and encourages the firms to hold relatively high level of cash to benefit the bank.

[5]   Controlling shareholders have various means to obtain the private benefits of control, such as outright theft, excessive salaries, special dividends, self-dealing through purchase or sale of assets at prices that deviate from their fair values (Shleifer and Vishny, 1997). Obata (2001) was of the same opinion, and the findings show that controlling shareholders will funnel profits for themselves, resulting in the lower sections of the shareholder pyramid getting a far lesser share.

[6]   To enable a manager to accumulate a large cash balance, certain opportunities or conditions must prevail. Opler et al. (1999) hypothesizes four conditions that enable a firm to hold excess cash. These conditions include widely-dispersed shareholdings, large firm size and low debt protection from corporate control through anti takeover charter.

7   This period was selected because we want to observe the impact when the Malaysian Code of Corporate Governance began to take effect after the issue on March 2000. This is the period where corporate governance is the issue and we would be able to observe the impact after the code is launched.

8   The scoring method was an adaptation of Hirota (1999). Based on his study, Hirota (1999) evaluated the 'main bank effect' by examining the degree of affiliation with the bank. The companies were classified as possessing 'close ties' if the firm satisfied all the three conditions, 'moderate ties' if it satisfied one or two of the conditions and 'weak ties' if it did not fulfill any of the conditions.

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