



***RELEVANCE OF HIGH AND LOW CASH HOLDINGS BY
CORPORATIONS IN MALAYSIA AND KOREA TO EFFICIENCY,
VALUATION AND RISKS***

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**HIGH AND LOW CASH HOLDINGS BY CORPORATIONS IN MALAYSIA
AND KOREA: RELEVANCE TO EFFICIENCY, VALUATION AND RISKS**

By

SOH WEI NI

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in
Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

April 2015

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

HIGH AND LOW CASH HOLDINGS BY CORPORATIONS IN MALAYSIA AND KOREA: RELEVANCE TO EFFICIENCY, VALUATION AND RISKS

By

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April 2015

Chair: Professor Annuar Md Nassir, PhD

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Cash is the most liquid asset in any firm's balance sheet and is seen as a very important component in facilitating day-to-day business transactions in firms. Prior studies have examined the appearance of agency costs in firms which hold large amounts of cash, suggesting several solutions to mitigate the costs on shareholders. Surprisingly, few if not none, have studied the efficiency of cash in generating firm earnings, which directly contribute to shareholders' wealth. This study examines three objectives involving corporate cash holdings from two selected Asia-Pacific countries, namely South Korea and Malaysia, with data from 2001 to 2012. These objectives include estimating cash holdings that contribute to firm efficiency, estimating the value of cash holdings and optimal cash level through shareholders' valuations, and investigating the impact of internal and external risk factors toward cash holdings.

The first objective employs data envelopment analysis (DEA) estimation and two-stage regressions model. The findings conclude that the firm size, firm growth, and gross domestic product (GDP) are statistically significant for firm efficiency in both markets. The cash holdings help improve firm efficiency as the adjusted R-square is significantly increased for all models. However, the cash holdings are not related to the efficiency of high-cash holding firms for these two stock exchanges. The contribution of cash holdings to firm efficiency is higher, and even double for a developed market compared with a developing market (Bursa Malaysia), which shows that the development stage of a country impacts on cash holdings' contribution to firm efficiency.

The second objective is to examine the valuation of shareholders from the value of additional cash holdings, given the existence of an optimal cash level. The value of

additional cash holdings is higher for high-cash holding firms than for respect to low-cash holding firms. It is explained by a higher contribution of cash holdings to firm's efficiency for high cash holding firm, which shows that shareholders do include the efficiency generated by cash holdings into their valuation. Besides, an optimal cash level is not statistically significant in shareholders' valuation.

The last objective in this study is to investigate the relevant financial ratios and risk factors that impact on the decisions on cash holdings. Generalized moment method (GMM) estimation is employed to investigate the impact of previous cash holdings on current stages. The results of GMM estimation show liquidity and repayment ability factors are significantly related with cash ratio for listed firm in KOSE and Bursa Malaysia. Whereas, risk factors only significant for high-cash holding firms in KOSE and low-cash holding firms in Bursa Malaysia. Thus, firm efficiency, risk factors and cash holdings are all connected.

Overall, the findings show that the roles and values of cash holdings in Malaysia and South Korea are akin to each other's. Higher cash holdings of a firm contribute to its higher firm efficiency and the dollar cash is judged at a higher value by shareholders. For shareholders, agency cost should be less worrying than the loss that a firm faces in default.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**PEGANGAN TUNAI TINGGI DAN RENDAH OLEH FIRMA DI MALAYSIA
DAN KOREA: RELEVAN TERHADAP KECEKAPAN, PENILAIAN DAN
RISIKO**

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Tunai adalah aset yang paling cair dalam kunci kira-kira di dan ia dilihat sebagai satu komponen yang sangat penting bagi melicinkan transaksi dan urusniaga firma. Kajian sebelum ini memeriksa kemunculan kos agensi di firma yang memegang sejumlah besar wang tunai, dan mencadangkan beberapa penyelesaian untuk mengurangkan caj kos pada pemegang saham. Topic yang berkaitan dengan kecekapan tunai dalam menjana pendapatan firma, dan yang boleh terus menyumbang kepada kekayaan pemegang saham tidak pernah dikaji. Kajian ini mengkaji tiga objektif untuk memeriksa pegangan tunai korporat dari sentimen dan aspek yang berbeza, dan pada negara-negara Asia Pasifik yang terpilih, bermula dari tahun 2001 hingga 2012. Objektif-objektif ini merangkumi anggaran bagaimana peranan pegangan tunai menyumbang kepada kecekapan firma, anggaran ke atas nilai pegangan wang tunai yang optima, dan kesan atau impak faktor-faktor risiko dalaman dan luaran ke atas pegangan tunai.

Objektif yang pertama menggunakan estimasi DEA dan model regresi dua peringkat. Penemuan tentang saiz firma, pertumbuhan firma, dan KDNK adalah statistik yang signifikan untuk mengukuhkan kecekapan dalam kedua-dua pasaran. Pegangan tunai firma meningkatkan model kecekapan yang diselaraskan dengan *R-square* untuk semua model. Sumbangan pegangan tunai untuk mengukuhkan kecekapan adalah lebih tinggi, kadangkala hingga dua kali ganda untuk negara-negara maju daripada negara yang membangun; ini menunjukkan bahawa tahap pembangunan negara memberi kesan kepada pegangan tunai atas kecekapan firma.

Objektif kedua akan menganggar penilaian pemegang saham pada nilai pegangan tunai tambahan, dan kewujudan tahap tunai yang optima. Nilai bersih tunai yang marginal bagi firma dengan pegangan tunai yang tinggi selepas pelarasan mengatasi nilai muka tunai yang melebihi satu dolar. Ini diterangkan oleh sumbangan yang lebih tinggi daripada pegangan tunai di atas kecekapan firma untuk firma yang memegang tunai yang tinggi; ini menunjukkan bahawa pemegang saham akan mengambil kira kecekapan yang dihasilkan oleh pegangan tunai ke dalam penilaian mereka. Selain itu, paras tunai yang optimum bukan statistik pemegang saham utama dalam penilaian mereka.

Objektif terakhir dalam kajian ini akan cuba untuk menyiasat faktor risiko dalaman dan luaran yang akan memberi kesan kepada keputusan tahap pegangan tunai, yang dipercayai adalah lebih baik daripada penentu pegangan tunai dalam kesusasteraan yang sedia ada. Oleh kerana faktor-faktor risiko ini meniggalkan kesan yang tertinggal pada pegangan tunai semasa, oleh itu, anggaran GMM akan digunakan untuk menyiasat kesan lama pegangan tunai pada peringkat semasa.

Secara keseluruhan, hasil kajian untuk peranan dan nilai pegangan tunai di Malaysia dan Korea Selatan adalah serupa diantara satu sama lain. Firma pegangan tunai yang lebih tinggi menyumbang kepada kecekapan firma yang lebih tinggi, dan wang tunai dolar dipandang pada nilai yang lebih tinggi dari pandangan pemegang saham.

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Last but not least, my gratitude also goes to other individuals, especially all the UPM staff members from the Faculty of Economics and Management and from the library of the University, who have assisted me in completing this task.

I certify that a Thesis Examination Committee has met on 16 April 2015 to conduct the final examination of Soh Wei Ni on her thesis entitled "High and Low Cash Holdings by Corporations in Malaysia and Korea: Relevance to efficiency, valuation and Risks." in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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LIST OF ABBREVIATIONS

BLUE	Best Linear Unbiased Estimator
BPL	Breush and Pagan Langragian Multiplier
CEO	Chief Executive Officer
CRS	Constant return to scale
DEA	Data envelopment analysis
DMU	Decision making unit
EMU	Economic and Monetary Union
EU	European Union
FDI	Foreign Direct Investment
G-7	The Group of Seven
GDP	Gross Domestic Product
GMM	Generalized Moment Method
GNP	Gross National Product
IMF	International Monetary Fund
IV	Instrumental Variable
KOSE	Korean Stock Exchange
NPV	Net Present Value
OLS	Ordinary Least Square
R&D	Research and development
ROA	Return on Asset
ROE	Return on Equity
S&P	Standard & Poor's
TE	Technical Efficiency
TFP	Total Factor Productivity
UK	United Kingdom
US	United Sate
USD	United State Dollar
VIF	Variance inflation factor

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Cash holdings are liquid assets that provide sufficient liquidity levels for corporations to meet daily operational activities, such as interest due on short-term debt financing, as well as positioning for positive investment opportunities. The role of cash in minimizing the opportunity cost per dollar is a pertinent issue discussed in the trade-off model (Opler et al., 2001). In general, corporations hold excessive cash in the balance sheet for precautionary and liquidity motives (Keynes, 1936). The precautionary motive for holding excessive cash is to provide solutions for an emergency occurring that may impact daily operational activities. Corporate managers prefer to hold more cash reserves when credit risk is high as a precautionary motive (Acharya et al., 2011). However, liquidity motive is found to be more prevalent to explain the recent increase in risk than the precautionary motive, since the importance of the precautionary motive has decreased over time. As a result, firms merely maintain little precautionary savings during the last decade (Boileau & Moyen, 2009).

The decision of firms to hold significant cash reserves in recent times has received attention in finance literature (Opler et al., 1999; Dittmar et al., 2002; Ozkan & Ozkan, 2004). The static trade-off model suggested for this behavior implies that corporate cash holdings are there to achieve an optimal level of cash where the marginal benefit of holding additional cash is equal to the marginal cost. If the appearance of an optimal cash level is true, then excessive or lower corporate cash relative to the optimal balance should have a negative contribution toward firm's performance. Theoretically, the estimation of optimal cash holdings is very easy to achieve, but not many firms maintain them in practical operations. The impact of excessive cash holdings on the performance of corporations can be either positive (Mikkelsen & Partch, 2003) or negative (Harford et al., 2008), subject to other factors such as governance and shareholders' protection.

The amount of cash held is determined by internal and external factors which vary across firms, industries, countries and the objectives of the corporation. Firms with cash holdings worth more than 25 per cent of its net assets are considered as high-cash firms (Mikkelsen & Partch, 2003). Corporations with higher excessive cash reserves will benefit when high liquidity makes it easier for managers to transfer funds among several of the corporations' expenses and debts, and allows for more flexibility in managing daily operational activities. Besides, this also helps save external finance costs when a corporation lacks sufficient cash to meet obligations such as short-term debt, withdrawal of investments and payment settlements to creditors. However, higher cash-holding levels involve greater carrying costs and opportunity costs as cash held on hand is

unproductive and is incapable of generating any profit or appreciating in value. In other words, a high corporate cash reserve actually increases the operational cost of corporations, since opportunity cost increases. Nevertheless, it also facilitates managing agency conflict costs between managers and shareholders, especially for countries with low shareholders' protections and rights.

On the other hand, managers may misuse a large portion of corporate cash holdings in unproductive investments. Besides, the tenure of an investment is also a concern in utilizing cash in corporations. Malaysia is one of the emerging countries seriously affected by the East Asian financial crisis of 1997/98, highly dependent on high volatility short-term capital inflow (Devason, 1998; Leong & Chan, 2001). A mismatch between the fund and investment tenure will cause managers to face mismatch difficulties. As a consequence, they may be forced to forgo some profitable investments as a result of cash being tied up in some long-term unprofitable investment. Most managers would rather keep excessive cash balance in banks rather than invest cash in highly volatile and risky financial instruments.

Alternatively, managers may perhaps prefer to channel their liquid cash holdings towards acquisition plans of other corporations in a similar industry instead of holding excessive cash in the balance sheet or bank (Harford et al., 2008). However, acquisitions that are a result of high excessive corporate cash holdings usually reduce the firm's value and performance. Corporations with more cash reserves tend to take over other corporations that suffer from liquidity problems. The take-over action that is frequently executed by cash-rich corporations may establish unhealthy competition in a fair market. High-cash corporations do not always have the knowledge and skills needed to solve the problems of the firms that have been bought over. A cash-rich corporation is not necessarily the most appropriate or effective party to handle problematic firms, and a take-over might lead to inefficiency in resource allocation and wastefulness of assets and capital. Furthermore, large amounts of take-overs and acquisitions by several cash-rich corporations in the same industry will encourage monopoly; the absence of fair competition will lead to market inefficiency and restrict consumers' choices and economic welfare.

Corporations with too much cash holdings are essentially generating more disadvantages than benefits on the business landscape, market, industry and economy. However, too little corporate cash holdings might cause a corporation to be trapped in liquidity difficulties with the high possibility of facing insolvency. In general, corporations with less cash holdings might fail to meet financial obligations from banks and creditors (suppliers). Once these corporations temporarily run out of cash, the scheduled debt claims and payments from corporations' payable parties will be postponed and delayed. The delayed payments will damage the corporations' reputation and trust of those payable parties that offer credit to the said corporations. Banks and suppliers may then evaluate corporations that are trapped in liquidity problems at a lower credit ranking as the result of losing trust in the financial condition of the said corporations. Subsequently,

lower credit rankings could generate negative impacts on credit line availability and external financing costs. Banks may even charge higher interest on the credit offered to corporations with liquidity problems as the chances of default increase. Banks have to bear higher risks for the funds offered. Some banks might reject the application for external financing needs required by low-cash-holding corporations due to bad records in historical payment documentations. The same also applies to other alternative financial markets such as the stock and securities debt markets; higher fees will be charged for any external financial needs.

Liquidity problems will lead to additional fees involved in external financing as compensation for the higher risk tolerated by investors and banks, and the low-credit-ranking corporations. As a result of higher risks borne by the parties offering credit, suppliers may shorten the credit tenure offered to mitigate the risk taken, and set certain terms and conditions for repayment, which directly reduces the convenience and flexibility of the corporations. Some of the creditors and suppliers might transform the incremental risks into the price charged for raw materials and services offered, which then raises the total production cost and cost per unit produced. Corporations have to pay more for the same amount of raw materials and services whereas the selling price for each unit remains the same; because the increase in production cost is due to an internal problem, corporations are unable to transfer the burden to consumers. The increase in external finance fees and production cost might worsen the corporations' financial condition. This will then lead to more difficulty in accumulating cash.

Therefore, corporate cash holdings are important in determining the performance and profitability of firms, and also as an extension to shareholders' wealth. A brief analysis of how cash holdings influence corporations will become clearer after we discuss the advantages and disadvantages of holding too much or too little cash in the balance sheet. The issue of the amount of cash holdings in firms does not solely impact the firms' balance sheets and agency costs. It also has several effects on the different dimensions of credit ranking of firms, their reputations and investment opportunities, future development, and trust of their stakeholders.

The majority of studies of cash holdings were conducted in the institutionally more developed capital markets such as the United States, European countries and Japan. The main reason developed countries became the focus of these studies was due to the size of their markets, availability of information and the value of the research with more users interested in the findings (investors, stakeholders and number of firms). Therefore, studies of corporate cash holdings in developing capital markets are becoming increasingly importance, hence providing the motivation of the study, especially in new markets in the Asia-Pacific region. It is interesting to conduct research on Asia-Pacific countries due to the heterogeneity of the regions' economies and their characteristics, which are recently having rapid growth. Therefore, this thesis, using appropriate methodology aims to investigate the contribution of cash holdings to firm's efficiency, and shareholders' valuation on cash per dollar. This study selects South Korea and

Malaysia as representatives of a developed and a developing country in the Asia Pacific region. The main reason for selecting these two countries is no prior research on cash holding has been conducted on South Korea and Malaysia. The two selected countries hold relatively high cash than other countries in Asia Pacific. However, the significance of the cash holdings study on South Korea and Malaysia is long overdue.

During the global financial crisis in 2008, the US Government increased interest rates to reduce the effect of the credit crunch. The rise in interest rates burdened the loan borrowers, especially the subprime borrowers with high leverage and who were facing a higher risk of default. As a result, subprime borrowers were unable to pay the interests causing banks to foreclose on mortgage-defaulted houses. As borrowers started defaulting on a large scale, most foreclosed houses were worth less than their loan balances when houses fell in value, thus banks had to short-sell them and bear the losses. Banks facing losses are usually restricted by bank reserves, and are incapable of giving out more loans, including mortgages and other credits needed by firms to finance their obligations and/or investments.

On the other hand, mortgage-backed securities, collateral debt obligations and credit default swaps, all nicely packaged as financial instruments, are resold to the public as an investment option. Rapidly changing uses of financial instruments and the development of sophisticated financial techniques increase the insecurity and lack of transparency, and can become toxic and unmarketable assets. As a result, 90 per cent of AAA ratings given to subprime RMBS securities were downgraded to junk status by credit rating agencies after the crisis. Massive use of these financial instruments was the cause for the occurrence of the financial crisis, and the unstable fluctuations and higher risks might have reduced firm earnings and given rise to a higher chance of a firm falling into default if it continued investing on high leverage. Higher default leads to financial failures that continue to lower the interest rates and cause inflation. Oil prices, energy costs and food prices will increase during high inflation, which further constraint consumer spending and results in recession.

Most Asia-Pacific countries have weak and immature fundamental financial structures, and rely on the banking industry for their external financing needs. They are unable to cope with a large foreign capital outflow. As a result, they experience several challenges such as sudden reversal of foreign capital that leads to currency crisis. Furthermore, most Asia-Pacific markets are less accessible to world capital markets compared with developed markets, and fewer potential investors serve as stand-by capital sources when the large existing investors withdraw their capital from the Asian markets. Immature financial policy distortions worsen the effect of adverse shocks. The liquidity problem in Asian markets, due to sudden reversals, causes loss of confidence from domestic and foreign investors, and finally leads to financial crisis. Besides, the smaller financial markets in the Asia-Pacific countries are to some extent, influenced by crisis transmitted from developed countries, such as the global financial crises in year 2008. Therefore learning from past lessons, liquidity becomes an issue of concern for firms in this region

to avoid the unwanted phenomenon happening again. Decisions that involve components that provide liquidity to firms, especially corporate cash holdings, are significant issues. The two countries are unlike other countries that exclusively focus on certain industries, such as Hong Kong and Singapore, which are not selected for this study due to the concentration of their development on the financial industry.

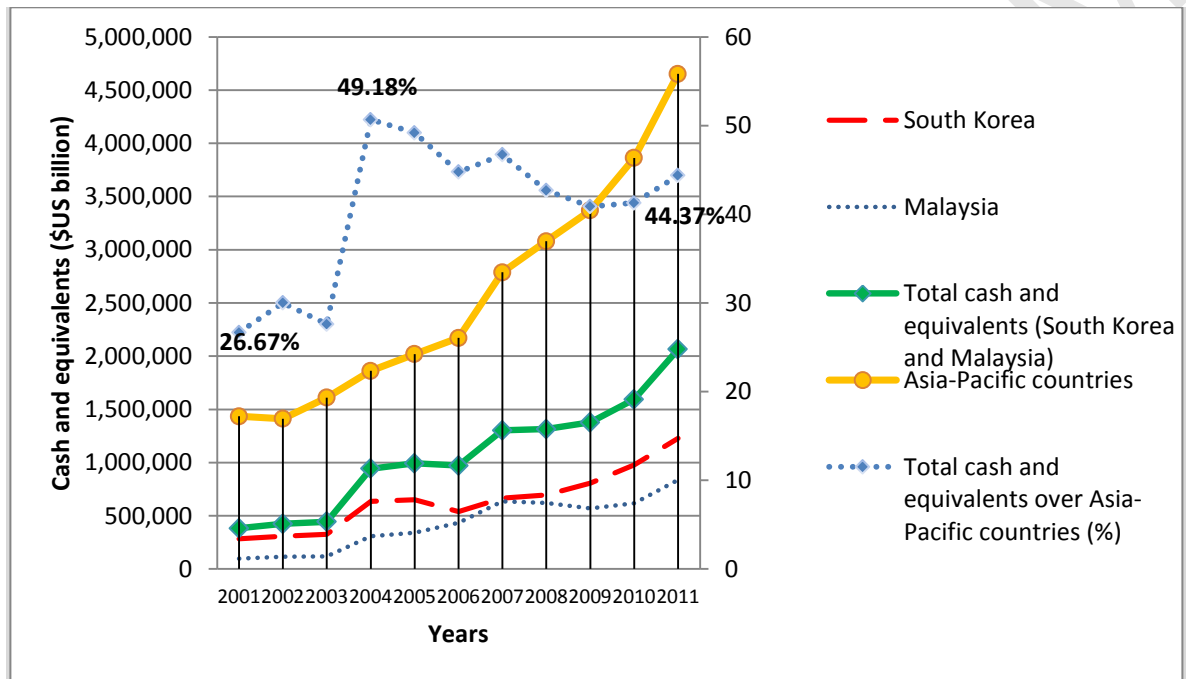


Figure 1.1: Percentages of Total Cash Holdings of South Korea and Malaysia over Total Cash Holdings of the Asia-Pacific Countries from 2001 to 2011

(Source: S&P Capital IQ)

Figure 1.1 depicts the percentages of total cash holdings of the two selected countries over the total cash holdings of the Asia-Pacific countries. The combination of cash holdings of listed firms in Korean Stock Exchange (Korea Exchange) and Bursa Malaysia is almost half (peak at 49.18 per cent in 2004 and achieving 44.37 per cent in 2011) of the total cash holdings of the Asia-Pacific countries, which could not be overlooked. The direction and movement in the trend of the cash holding combination of these two countries and the total cash-holdings of the Asia Pacific countries are similar. Therefore, a study of the stock exchange of South Korea (Korea Exchange) and Malaysia (Bursa Malaysia) can be done as a small sample of Asia-Pacific countries.

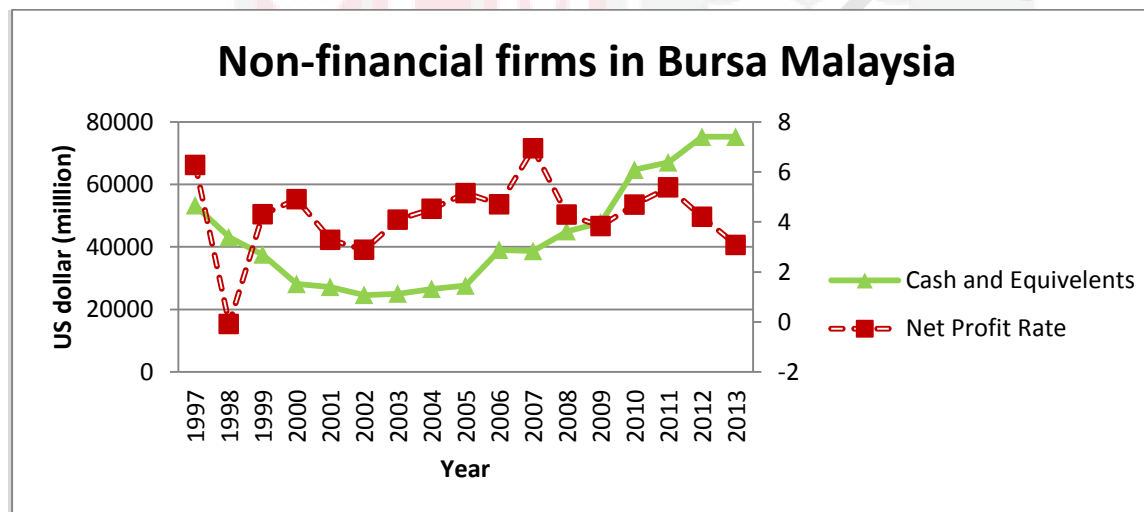
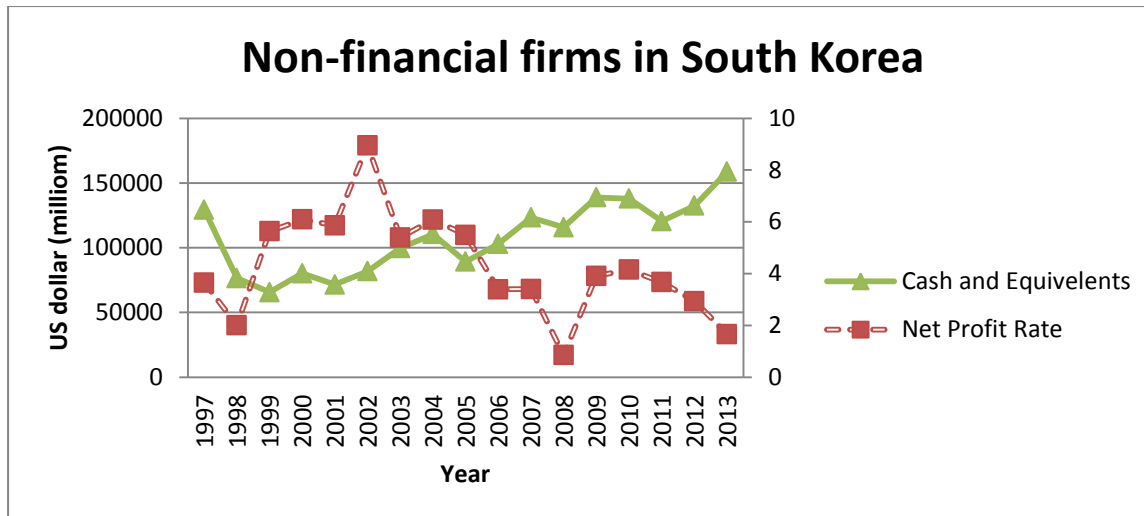


Figure 1.2: Average Net Profit Rate and Cash Holdings for Non-financial Firms in Korea Exchange and Bursa Malaysia.

(Source: Datastream)

Since corporate cash holdings have the capability of enhancing firm's value and performance, firms listed in Bursa Malaysia and Korea Exchange are expected to perform better than firms in other Asia-Pacific countries. However, a growth in cash holdings does not contribute to any increase in investments. Firms would rather hold cash for transaction purposes than invest in financial instruments and other investment avenues, due to the decrease in net profit rates (Hanazaki & Liu, 2007). Figure 1.2 shows the unstable and decreasing net profit rate for non-financial firms in Korea Exchange and Bursa Malaysia, respective to the continuous increase in cash and equivalents. Both the non-financial firms in Korea Exchange and Bursa Malaysia experienced great drops during the Asian financial crisis and the global financial crisis in 1997 and 2008 respectively. Cash and its equivalents have continued to rise since the

Asian financial crisis, which can be explained by the fluctuation of net profit rates and unstable investment returns.

As returns on investment and business fluctuation are unpredictable, firms would rather maintain a certain level of cash holdings than invest or expand their operations. Even though cash on hand is unproductive, it provides immediate liquidity to resolve any unexpected emergencies or losses. Therefore, the role of corporate cash holdings towards firm's efficiency is investigated in this study by examining the differences in firm's efficiency contributed by cash holdings in these two markets. Cash holdings, agency cost and firm's performance are the usual elements shareholders are generally concerned with. Since shareholders are the owners of firms, their valuation with respect to the value of cash per dollar is also examined. From these findings, the perceptions of shareholders and managers towards cash can be revealed. Understanding the role of cash holdings aids in improving their utility as a workable tool in enhancing corporations' performance and maximizing their earnings.

1.2 Problem Statement

In prior studies, cash holdings are always linked to leverage, external funding and investment opportunities. The amount of cash holdings is often determined by two common factors, which are accessibility to external funding and financial investments; these elements are connected to financial institutions and negatively related to the amount of cash holdings. Firms will hold lesser cash if they prefer to invest in financial instruments or have easy access to external funding. However, these determinants are actually associated with each other and a change in one of them will impact the other in a financial cycle. Thus the decision to hold relatively more cash reserves becomes significant in order to maintain sufficient liquidity and avoid depending on these two elements while facing relatively higher default risk.

Prior studies have examined the role of agency cost in firms holding large amounts of cash, and have suggested several solutions to mitigate the cost charges on shareholders.¹ Surprisingly, few have studied the role of cash in generating firm's efficiency, thus increasing shareholders' wealth. If cash holdings positively contribute to higher shareholders' wealth, e.g. higher profits, higher dividends and better stock prices, studies of agency cost will be less important. By focusing on the efficiency of the role of cash in maximizing shareholders' wealth, this study provides new insight into the need to hold a certain amount of cash. If the role of cash holdings in generating firm's efficiency is important, this study will be able to enhance the information about cash holdings, and

¹ Refer to corporate debt policy (Kim & Eric, 1986), Organization (Vijay & Seungjin, 1991), dividend payout ratio (Rozeff, 1982), and capital structure (Friend & Lang, 1988).

show that agency cost, while influencing shareholders' wealth to a certain extent, should not be the main concern of the shareholders.

Generally the role of cash holdings to prevent a firm from becoming a defaulter is commonly overlooked, and shareholders are more concerned over the cost of holding cash, or "agency cost". Shareholders prefer firms to hold lesser or optimal cash levels in order to mitigate the agency cost. Yet, no study has shown evidence of shareholders' view of optimal cash levels. Corporations with too little and too much cash holdings may experience several advantages and disadvantages when the cash balance level is above or below optimal cash holdings. However, is the firm's default or agency cost severely damaging shareholder's wealth? The answer remains unknown.

The findings on this research issue will be able to reveal us the way shareholders judge the cash compared with the real way cash contributes to their wealth. Does the shareholders' valuation of cash per dollar reveal the role of cash holdings in generating firm earnings? If the answer is yes, then, theoretically, shareholders should be concerned about the optimal cash holding that reduces agency cost.

Thus, the 3 relevant issues to be examined relate to:

- The contribution of cash holdings' to firm's efficiency is unknown.
- Value of cash holdings and optimal cash levels through shareholders' valuation is yet discovered.
- The impact of financial ratios and risk factors on cash holdings is not studied.

1.3 Research Questions and Objectives

Mainstream literature and research are concerned with the argument of cash holdings, such as in the area of capital structure, agency cost mitigation, external financing options, and determinants of corporate cash holdings. Most of the studies have the tendency of making the cash holdings function more efficiently. As the statement in the theory of production says, as long as the asset positively contributes to production, whether or not it is facing diminishing returns, the additional unit of asset taken is still profitable. This study focuses on the role of corporate cash holdings in generating firm earnings, and the value given by shareholders to the cash per dollar held by listed high-cash and low-cash firms in South Korean and Malaysian stock markets.

Therefore, the research questions are:

1. What is the nature of the corporate cash holdings that are contributing to firm's efficiency?
2. How does the value of cash holdings per dollar differ in high-cash and low-cash firms?
3. Under what condition/s do the shareholders value the presence of optimal cash holdings?
4. How do the cash holdings respond to financial ratios and risk factors?
5. How are the firm specific and macroeconomic variables affecting the firm's efficiency?

Hence, the objectives of this study are to:

i. Estimate the contribution of cash holdings' to firm's efficiency

This objective relates to identifying the internal and external factors that are correlated with firm's efficiency, especially cash holdings. Cash holdings are believed to positively contribute to firm earnings.

ii. Estimate the value of cash holdings and optimal cash levels through shareholders' valuation

The shareholders' valuation of cash per dollar would reveal how much they judge additional cash holdings are needed in their revaluation resulting in changes in stock returns. The valuation of optimal cash holdings is through the perception of shareholders of the firm's cash management.

iii. Investigate the impact of financial ratios and risk factors on cash holdings

Risk factors are reflective of the unexpected volatility involved in daily operational activities that potentially could impact firm's performance; these factors can provide explanations for cash holdings as joint determinants. The fluctuation in financial ratios and risk factors are the main factors leading to a firm defaulting. Close observation of these significant risks related to cash holdings would reduce the probability of default.

1.4 Contribution of the Study to the Literature

This study applies appropriate methods with several robustness checks, providing a modest and clear analysis on the relationship of cash holdings, firm's efficiency and shareholders' valuation. First, this study advances the literature on the subject of cash holdings, and enhances the literature related to corporate cash holdings, seeing that no previous study has comprehensively elucidated the role of cash holdings in firm's efficiency to generate earnings, and the value of perception of shareholders on organizational cash holdings. The scope of cash holdings is expanded by covering a new efficiency theory. Agency conflict, and resulting cost, the two main concerns of shareholders with regards to cash management, have been studied over and over from different aspects. The literature regarding agency problems is very comprehensive and complex; existing studies mainly focus on agency cost mitigation, the cause of agency cost, and how agency cost damages shareholders' wealth.² This study provides evidence to show the importance of holding cash than concerning on the agency cost as focused in the existing literature.

Second, this study contributes to corporate financial policy and may enhance evidence on how shareholders' value cash holdings. Faulkender & Wang (2006) investigated the deviation in the marginal value of corporate cash holdings from variances in corporate financial policies and showed that shareholders tend to judge a higher value for additional cash in a firm with low leverage and financial constraints. However, the role of cash holdings in generating a firm's efficiency has been largely ignored. This study provides additional supportive evidence of the accuracy of shareholder' valuation by linking it to efficiency. If the shareholder is aware of the role of cash holdings in generating a firm's efficiency, the value of cash can be adjusted according to cash levels. As shareholders tend to reduce agency conflict by reducing a firm's cash holdings, optimal cash holdings should not be overlooked during shareholders' valuation.

Prior methodology includes applying the ordinary least square (OLS) regression with common robustness checking. However, this study applies more appropriate approaches to allow each firm to have its own intercepts, while controlling the slope to be homogenous by applying panel and random effect regressions. This contributes to the descriptive statistics of firms, as this study hopes to ascertain that shareholders' valuation against firms contains a fixed effect or individual-specific effect with certain level of cash holdings. The fixed effect does carry some meaning, thus separating this portion will help in generating more crucial and accurate value for marginal cash holdings.

² Related literature on the issue of agency cost is discussed in the following literature review.

The third objective is to enrich risk management literature by providing evidence of risk factors that influence the level of cash holdings. The connection among financial ratios and risk factors and cash holdings when confirmed can be used to alert the manager to maintaining additional cash holdings in order to have sufficient liquidity to overcome possible challenges. The findings can also serve as a reference for shareholders to understand the purpose of increase in cash holdings and identify unnecessary high-cash holdings that may lead to agency conflicts.

1.5 Organization of Study

The first chapter summarizes background and motivation of the study. It outlines the problem statement, research objectives, research questions and contributions of the study. The second chapter provides a summary of the existing literature on cash holdings, past studies on determinants of cash holding, firm's performance, valuation of shareholders of cash holdings and relevant risk factors. Data and research methodology are discussed in the third chapter: sample selection; the data required, hypotheses and the methods of analysis employed. The hypotheses are developed at the end of the chapter. Results and findings are presented in the two chapters (Chapter 4 and 5). The first part documents the descriptive statistics, while chapter 5 discusses in detail the findings on all the objectives of study and robustness of results. This thesis ends with summary, main conclusions and implications, as well as the limitations of the study.

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PROCEEDING:

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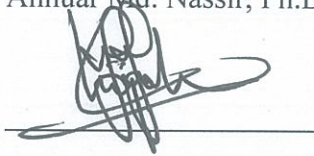
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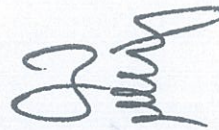
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