

Corporate Governance and Cash Holdings in Canadian Firms

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A thesis submitted to

Saint Mary's University, Halifax, Nova Scotia

in Partial Fulfillment of the Requirements for

the Degree of Masters of Finance

September, 2014, Halifax, Nova Scotia

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Date: 18th September 2014

Acknowledgements

I would like to extend my gratitude to all those who helped me to successfully complete my research project. I would like to thank my supervisor and mentor Dr. Rahman Khokhar who helped me in the completion of my research paper and also helped me in choosing this area of research for my paper. This accomplishment would not have been possible without him. Finally, I express my gratitude towards Dr. Francis Boabang who has been a constant pillar of strength for masters of finance students.

Abstract

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In context of the Canadian markets, the aim of this study was to establish a relationship between corporate governance and cash holdings and Using governance metrics based on Globe and Mail Corporate governance data, we find that governance has a substantial negative impact on the cash holdings of the firms. When segregated on the basis of size, smaller size firms have shown consistent results when compared with the overall market result. On the other hand, no conclusive evidence could be established for bigger size firms. Our results are consistent with the assumption that investors in companies with poor shareholder protection cannot force managers to disgorge excessive cash balances. This research provides a platform for future research in context of the Canadian markets that will further explore the relationship between corporate governance and cash holdings.

18th September 2014

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Chapter 1: INTRODUCTION

1.1 Background of Corporate Governance

Corporate governance, a topic of immense importance refers to the guidelines that control and direct a corporation. Generally people associate corporate governance as a matter regulated by legislation, a more famous example being the Sarbanes- Oxley Act in context of the US firms and Ontario's Securities Act (OSA) for Canadian firms. Macdonald (2010) further broadened the scope of corporate governance in his article "Why You Should Care About Corporate Governance" published in Globe and Mail on December 3, 2010. As per him, governance is beyond regulations, a matter of ethics to make sure that action of employees, especially the senior management is not driven by personal greed or nepotism. Klazema (2014) further exemplified the importance of a good governance system from a business perspective. By good governance he referred to disclosure and transparency of business information that leads to higher level of trust amongst general public and minimizes fraud.

1.2 Importance of Corporate Governance

What makes the study of corporate governance so importance is that fact that there has been evidence from multiple resources of market participants putting a higher value to the stocks of a well-governed company. Global Investor Opinion Survey by McKinsey & Company (2002) indicates that significant numbers of institutional investors are willing to pay premium for the stock price of a company with a good corporate governance system in place, with premiums varying from 12-14% in North America and Western Europe, 20-25% in Asia and Latin America and over 30% in Africa and Eastern Europe.

The survey further cites the fact that 60 percent of investors around the globe consider governance quality before investing in a company. Organization for Economic Co-operation and Development (OECD (2004)) in its “Principles of Corporate Governance” publication, mentions the fact that lower cost of capital and efficient use of resources can be achieved with an effective corporate governance system in place. Johnson et al (2000) in their study of Asian Financial Crisis of 1997-98 also provided evidence that suggested, measures of corporate governance especially the adequate provisions for protection of minority shareholders provide an explanation to exchange rate depreciation and stock market decline. Financial scandals around the world, the most famous being Enron and WorldCom in North America and Parmalat in Europe, have further augmented the need for a better control mechanism for managers which had also been favored in earlier research by Berle and Means (1968).

1.3 Importance of Cash Holdings

Before we investigate the relationship between corporate governance and cash holding, we first need to understand the importance of cash holdings and why do firms hold cash? Stulz et al. (2009) cited four main reasons why firms find it attractive to hold cash. The first reason is precautionary motive wherein firms hold cash in order to avoid any shocks due to adverse market conditions, when borrowing is costly. The second reason is transaction motive. Third reason for holding cash is for repatriating taxes. Firms are motivated to keep their earnings from their foreign subsidiaries abroad only in form of cash to avoid taxes. The fourth reason, which is crucial from point of view of our research is, the agency motive. During periods when no profitable investment

opportunities are available, entrenched managers would prefer to hold cash rather than distributing among shareholders, as argued by Jensen (1986).

Another possible reason for holding cash is related to research and development (R&D) activities of an organization. The growing importance of R&D can be attributed to the growing nature of economies around the world. The inherent nature of R&D is uncertainty and this very fact led to a natural relationship between cash holdings and R&D activities of an organization. Stulz et al. (2009), cited evidence from US suggesting that firms have changed over a period time as they are holding less inventories and receivables, and are becoming more R&D intensive which in turn gives them additional motive to hold cash. In his research, precautionary motive has been documented a reason for increase in the cash ratio whereas no plausible evidence has been found suggesting agency problems' contribution towards increase in the cash holdings.

1.4 Corporate Governance and Cash Holdings

No discussion on corporate governance is complete without addressing the relationship between shareholders and managers that is characterized by conflicts. Agency costs that arise because of these conflicts between the two self-interested parties, consists of monitoring the behavior of managers. Cash holding available to firms is a centrifugal force in this relationship between shareholders and managers as Jensen (1986) in his free cash flow hypothesis asserted that entrenched managers are hesitant to distribute excess cash to shareholders. The central tradeoff in free cash flow hypothesis developed by Jensen (1986) and research on management's control on financial policies by Stulz

(1990) is to provide sufficient capital to managers to invest in projects with positive NPV and limit the availability of capital for projects with low cash inflow. However, without a proper governance mechanism in place, it is not possible to avoid self-interested managers to invest in low return projects at the expense of distributing cash reserves to shareholders. This further signifies the importance of governance in controlling the disgorgement of cash reserves by managers and gives us a reason to study how corporate governance affect the tendency of cash reserves.

Cross country studies by Dittmar et al (2003) and Lins and Kalcheva (2004) provide evidence suggesting that stronger shareholder rights are linked to lower cash holdings or in other words, weak corporate governance measures increase cash holdings.

In context of the US markets, there has been a mix viewpoint on governance and its role in cash reserves. Mikkelson and Partch (2003) suggest that cash holding is not a cause of conflict between shareholders and managers. On the other side, Harford (1999) provides evidence to validate the fact that shareholders are right in showing concerns regarding cash reserves at disposal to manager's discretion. A substantial research by Harford et al (2008) specifically in context of the US markets provided evidence that firms with weak governance structure have lower cash reserves and excess cash in an environment of weak shareholder rights escalates acquisition activities and capital expenditures. They further added that companies with weak shareholder rights with excess cash reserves have low valuations and profitability.

Chapter 2: LITERATURE REVIEW

There has been ample evidence advocating the tendency of managers to engage in low return investments at the cost of investors. This coupled with frequent corporate collapses and lawsuits have necessitated an efficient monitoring system for the organization and have become a matter of global concern. Bars have been raised to improve the standards of present corporate governance systems with underlying assumption that a good governance system in place leads to higher returns of stakeholders. Felton et al (1996) and Hawkins (1997) defined good governance as the one in which outsiders are a majority in a company board, along with having independent directors who have no ties with the management and who hold significant amount of the shares of the company. Additionally board members are answerable to investor requests and their remuneration is in a large extent by company stocks.

Now the actual question arises, how do we formally define the concept of corporate governance? The answer lies in the various researches conducted during previous years. The most notable of them is by Shleifer and Vishny (1997), wherein they define corporate governance as a measure through which investors, themselves ensure returns on their investments. Their definition provided a more broader spectrum to the concept of corporate governance by including the ideology of agency theory and principal agent relationship which was previously formulated by Jensen and Meckling (1986) wherein they defined agency theory as a study of relationship between managers and stakeholders which has been marred due to conflicting interests. A similar viewpoint by Picou and

Rubach (2006) define corporate governance as the establishment of rules and regulations to align effectively the interests of the agents (boards and managers) with those of the principals (investors).

2.1 Measures of Corporate Governance

Beyond the bounds of the above-mentioned definitions, still no consensus has been reached on what constitutes a good corporate governance system or what are its elements. Major studies on corporate governance have tried to address this particular issue of a good governance system in isolation i.e. Hermalin and Weisbach (1991), Barnhart et al (1994), Agrawal and Knoeber (1996), Bhagat and Black (2002), Bozec (2005), and Krivogorsky (2006). But the partial approach of these studies has failed to develop a decisive model for corporate governance.

2.2 Governance Measures in Context of US Market

Recent study done by Gompers et al (2003) used various governance measures to assess shareholder rights. In this model they used twenty-four corporate governance provisions for a sample of about 1500 firms per year and from this sample they build a Governance Index (G Index) to serve as a proxy for shareholder rights.

A modified version of the G Index (Gompers et al (2003)) was developed by Bebchuk et al (2005) and is known as the Entrenchment Index or E Index. E Index is based on six provisions: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers and charter amendments.

The rationale behind not including the other 18 IRRC (Investor Responsibility Research

Center) provisions present in Gompers et al (2003) governance index was because of their positive correlation with firm valuation. The purpose of E Index was to develop a governance measure that is not affected by noise produced by other IRRC provisions. Although the main purpose of these studies mentioned above was to establish a positive correlation between corporate governance and firm performance but an additional sub-component of end result of these studies was a corporate governance index. Some private organizations also developed corporate governance rating systems in the US, for example, Standard & Poor's S&P Corporate Governance Scores and Governance Metrics International (GMI).

It is argued that indices like G Index, S&P or GMI corporate governance scores are better measure of corporate governance as opposed to stand-alone proxies as the former include all the elements that constitute a good corporate governance system.

2.3 Governance Measures for Other Countries

A similar approach had been developed by Bauer et al (2004) who constructed good governance portfolios and bad governance portfolios using the Deminor corporate governance ratings (started in 1995 and currently part of RiskMetrics (MSCI group)) for companies that are part of FTSE Eurotop 300 index. Evidence of research on similar lines have been found from around the world, amongst which the notable ones are Drobetz et al (2003) corporate governance index, based on 30 governance proxies for German public firms and Von Nandelstadth and Rosenberg (2003) index of corporate governance for the

firms trading on Helsinki Stock Exchange and finally Black et al (2003) corporate governance index for 525 companies listed on the Korean Stock Exchange.

2.4 Governance Measure for Canadian Firms

In Canada corporate governance score is developed by Globe and Mail (a Canadian newspaper), for companies trading on Toronto Stock Exchange and is part of S&P/ TSX index. This score takes into account shareholder rights, disclosure issues, board composition, manager shareholdings and compensation. The data for this was obtained from the published proxy information circular for shareholders. The results are summarized in an aggregate corporate governance index (CGI), which is computed as the sum of these four sub-indices.

2.5 Previous Research in Corporate Governance

Cross border perspective

Dittmar et al (2003) from a cross-country perspective (data for more than 11000 samples firms from 45 countries was collected from Global Vantage Database for 1998, including 471 firms from Canada with US, UK and Japan representing the largest share in the sample) suggest that organizations in countries with weak governance tend to hold nearly twice as cash as organization in countries with stronger shareholder rights. They further elaborated on the fact that investors in countries with weak shareholder rights cannot force managers to forfeit excessive cash. Pinkowitz et al (2004) further documented that firms in countries with weak shareholder rights are less likely to be operated for the benefits of shareholders because the weak shareholder rights makes it easier for management and controlling shareholders to appropriate corporate resources for their

own benefit. Cross-country studies give evidence that suggest stronger shareholder rights are associated with lower cash holdings. This signifies the fact that shareholders' with authority want managers to forfeit cash to shareholders. Lins and Kalcheva (2004) in their cross border study involving 5000 firms from 31 countries testified that in an environment of weak external shareholder protection, firm values are lower when controlling managers hold more cash and firm values are higher when controlling managers pay dividends.

In context of US market

In the context of the US market, the previous studies have provided a mixed opinion on cash reserves. Dittmar, Mahrt-Smith (2007) found that dollar value of cash is significantly less if a firm has poor corporate governance. They further documented that a well governed firm has its excess cash reserves better utilized whereas firms with weak corporate governance exhaust excess cash reserves more rapidly on less profitable investments than those with stronger corporate governance. In short, firms which are poorly governed deplete excess cash resources and damage the value of firm. Harford (1999) in his study ascertained that acquisition by excess cash reserves is value decreasing for firms in most of the cases which is consisted with the free cash flow hypothesis (Jensen (1986)).

In contrary, works of Mikkelson and Partch (2003) suggest that large cash reserves held by a company continuously over a period of time do not lead to poor operating performance. Opler et al (1999) in their study of publically traded US firms over a period

of 1971 till 1994 documented a very strong precautionary motive behind managers holding excess cash reserves. However their study provide limited evidence to prove the fact that positive excess cash can lead firms to spend more on investment or acquisitions. Fresard and Silva (2010) in their study of excess cash and corporate governance in context of US cross listing have found substantial evidence in favor of foreign firms listed on US exchanges. The value investors attach to excess cash reserves is higher for them when compared to domestic firms in the US market.

Motivation for my research comes from fact that no prior research has been done to study relationship between corporate governance and cash holdings in context of the Canadian market. Serving as a reference for my research, I follow the methodology deployed by Harford (2008) and I further extend their study to the Canadian companies that are dual listed in TSX and S&P simultaneously. Harford et al (2008) studied relationship between corporate governance and cash holding in context to the US firms and provided a valuable insight into the distribution of cash based on the strength of the governance structure. They further observed that firms with excess cash reserves along with weak shareholder rights tend to have lower profitability and valuation. A positive correlation between shareholder rights and profitability has been sighted by this research.

Chapter 3: METHODOLOGY

3.1 Data Description

Measuring corporate governance

For the purpose of our research, we used Globe and Mail (G&M) annual corporate governance ratings developed by McFarland (2002) to measure the quality of corporate governance for Canadian firms. This is public information, which is available freely through Globe and Mail newspaper or the internet. Report on Business of the Globe and Mail newspaper in collaboration with the Clarkson Centre for Business Ethics and Board Effectiveness (CCBE) at Rotman School of Management, University of Toronto, assessed the corporate governance practices on the basis of the proxy information circulars published by Canadian firms. McFarland (2002) cited that marking system used was based on recommendations from professional associations like CCBE, institutional investors and academicians. The annual G&M report includes companies listed in the S&P/TSX index for that particular year.

A discrepancy in the data in terms of companies not present every year in G&M ratings is because they were not included in S&P/TSX index for that particular year. An alternate explanation by McFarland (2002) mentions the fact that several companies in the index on Sept. 1, 2002 (the initial year of G&M ratings) were excluded because they had merged recently and hence do not have new proxy circulars available. All information in the G&M study is based on the company's last proxy circular.

Considered as a valued reliable source of valuable governance information in context of the Canadian markets, recent researches in similar domains have relied on the G&M annual ratings to evaluate the association between corporate governance and performance of Canadian firms ((Klein (2005) and Adjaoud (2007)) or study on quality of earnings by Niu (2006). Bozec and Bozec (2007) used G&M governance scores to analyze relationship between ownership structure and quality of corporate governance practices in Canada.

The Globe and Mail corporate governance ranking is calculated on a 100-point scale constituting four components. The aggregate score is obtained by summing the ratings obtained in these four components, which are board composition, shareholdings and compensation issues, shareholder rights issues and disclosure issues (further details about these four components are mentioned in Appendix A on page 39). According to G &M, firms with superior governance practices should achieve higher scores. Company with maximum points is ranked highest, which signifies that this firm has a highly independent board along with stringent requirements for share ownership by directors and their CEOs. Additionally, top ranked firms manifest equality in terms of treatment of shareholders in voting rights. These companies honestly provide full disclosure of key information, such as payment to auditors and the relation of directors to the company.

Control variables

For the purpose of our study we utilized Compustat Fundamental database to collect data for the various control variables used in our research. Keeping in sync with the G&M

governance score that initiated in the year 2002, the annual data from Compustat Fundamental dataset ranges from 2002 till 2013.

A code was written in python to combine data files from two sources. The first file contained G&M governance ranking for one particular year and the second file was a master data file from the Compustat Fundamental database which contained the control variables ranging from 2002 till 2013 for companies listed on both S&P and TSX index. The purpose of the code was to combine the two datasets in a manner such that the companies included in the final output file should be present in both the data files. The code is written for every year and the end result is a combined in a final output file that contains both the governance data and financial data for companies for years ranging from 2002 till 2013.

SIC codes were used to eliminate companies with SIC code between 4900 and 4999 and between 6000 and 6999 as companies with SIC code within this range are classified as utilities and financial companies respectively. Their purpose of holding cash is for operational purposes and hence including these companies would have distorted our end result.

Following are the control variables used in our research:

Firm size: measured as a natural log of total assets of a company for a particular year.

Cash Holdings: $\log(\text{Cash} / \text{Sales})$. For our research we consider liquid cash a necessary

requirement to support the working capital needs of the firm, which in turn depends on the sales.

Sales: This item represents gross sales (the amount of actual billings to customers for regular sales completed during the period)

Total assets: total amount of assets held by the company

R&D/ Sales: ratio of R&D to sales is used as a proxy measure for financial distress cost. R&D and Sales data for this purpose has been obtained from Compustat fundamental dataset.

Current Assets/ Total Assets: ratio of current assets to total assets

Firm Leverage: ratio of total debt to total assets

Firm's Liquidity: ratio of working capital to total assets

Capital Expenditure/ Total Assets: ratio of capital expenditure to total assets

Before we draw any ratios or analysis from these variables, we have winsorized the control variables at 1% level to remove the distortion effect of any outliers. All the ratios including current assets over total assets, liquidity, leverage, R& D over sales and capital expenditure over total assets have been winsorized again at 1% to further remove any distortions

3.2 Hypothesis Development

Majority of previous researches on similar topic have concentrated on US markets. Whatever limited evidence of research in context of Canadian market we have is related to corporate governance and performance of firms (Adjaoud et al (2007) studied effect of

board's quality using Globe and Mail (G&M) governance score on firm's performance). This gives us a reason to study a topic that has been ignored by researchers previously.

We conduct our research in Canadian setting to ascertain whether corporate governance affects the cash holdings in similar ways as it affects the US firms. Canada being developed country with similar size and geographical location is heavily dependent on the US. This fact gives us further motivation to conduct the research with a strong intuition that we will find results similar to those of Harford (2008). Specifically we test if stronger corporate governance leads to lower cash holdings or alternatively weaker corporate governance lead out any higher cash holdings.

On one hand, we expect similar results to that of the US, whereas on the other side, Canada being a comparatively smaller economy and culturally different from US, we could expect a dissimilar relationship as well. The results in this case can be similar to the cross country results of Dittmar (2003). Therefore, our hypothesis in null and alternate form is:

Null hypothesis (H_0): Relationship between corporate governance and cash holdings is positive for Canadian firms.

Alternate hypothesis (H_a): Relationship between corporate governance and cash holdings is negative for Canadian firms.

We differentiate our research based on the proxy used for measuring governance variable. Our research is handicapped by availability of only one index that measures

corporate governance in Canadian markets. However, the governance variable used for the purpose of our research is the Globe and Mail (G&M) annual corporate governance ratings developed by McFarland (2002), to measure the quality of corporate governance for Canadian firms.

3.3 Data Analysis

In this analysis we aim to quantify the relationship between corporate governance and cash holdings. For this we analyze the sample in two steps. In the first step, we draw a descriptive statistics of all the variables in the sample and perform univariate analysis. These statistics include mean, median, standard deviation, 25th and 75th percentiles and total number of observations and provide overall perspective of the sample data. We also compute the values of the four governance variables (shareholder rights, disclosure, compensation, board composition) along with their total score into percentage terms. This is done by dividing actual score a company received in a particular category by the maximum score in that category. This will give us the relative percentage value for that particular governance variable. Further we categorize the companies into 5 equal size quintiles and report the median values of cash holdings and the governance scores (in percent) for each quintile. First quintile represents companies that are smallest in size, whereas fifth quintile represents the largest companies. In addition, we dissect the companies into quartiles based on the “total governance” score within each size quintile. We then report the median values for cash holdings and governance variables for the 1st quartile (low governance score i.e. weak rights) and 4th quartile (high governance score i.e. strong rights) within each size quintile.

In the second step, we examine the relationship between cash holding and governance variables in a multivariate setting using various control variables. To examine whether governance variables are related to change in firm's cash holdings, we regress cash holdings on four governance variables (shareholder rights, disclosure, compensation and board composition).

In different models, we control for several cash holding determinants and endogeneity using lagged cash holdings as an independent variable. In the first model we will regress cash holding on the total governance score. In the subsequent models, we will add additional independent variables i.e. control variables and lagged values of cash holdings, in the regression equation to compute relationship between dependent and independent variables which is significant at various confidence intervals. We further segregate the firms into five size quintiles and repeat the above mentioned regression models for the smallest and the largest firms to ascertain the relationship between governance and cash holdings based on the size of the firms.

Chapter 4: ANALYSIS

4.1 Descriptive Analysis

Cash holding being the most significant variable for the purpose of our study has a mean value of 0.31 and median of 0.08 along with standard deviation of 1.98. This indicates skewness in cash holdings data that has been computed as ratio of cash and cash equivalents to sales. The sales and cash figures used for the purpose have been winsorized at 1% to mitigate the effect of any outliers. A notable observation in the above table is the mean and median values of the total governance score and the four governance variables. Total score has a mean and median value of 66.27 and 67.00 respectively. This is followed by board composition that has a mean of 23.82, and median of 23.00, followed by compensation with mean of 14.51 and median of 14.00, disclosure with mean of 8.07 and median of 8 and shareholder rights with a mean of 19.40 and median of 20.00. All these values signify symmetry or proves the absence of any skewness in the governance data as the mean and median values are close to each other for all the governance variables. Firm size, calculated on the basis of log value of total assets, has a mean value of 7.74 and median of 7.67.

Moving to the financial data, the average values of sales, capital expenditure (capex), net total assets (total assets minus cash and cash equivalents), research and development and total debt figures are winsorized at 1% and the mean and median values signify skewness in the data pertaining to these values. The financial ratios, which are calculated from the financial data, are further winsorized at 1% to arrive at final figures and the values suggest absence of any skewness in the data.

Table 1

The below table presents summary statistics for all the variables (including governance and control variables) used in our analysis. Variables are summarized based on their mean, standard deviation, median, 25th and 75th percentile values. Variables in table 1 include cash holdings, which is the ratio of cash to sales (cash and cash equivalents/ sales) followed by the four governance variables (board composition, compensation, disclosure and shareholder rights) with their absolute values. The next are control variables including Current Assets, cash and short term investments, current liabilities, net total assets (total assets minus cash and cash equivalents), sales, capital expenditure and total figures. The aforesaid variables are expressed in \$ millions and are winsorized at 1%. These variables are followed by size (natural log of total assets), ratio of research and development to sales (R&D/ Sales), ratio of current assets to total assets (current assets/ total assets), leverage (total debt/ total assets), liquidity (working capital/ total assets) and ratio of capital expenditure to total assets(capex/ total assets). All the ratio figures have been further winsorized at 1% to subside the effect of outliers.

Variable	Mean	Median	St. Dev	Min	Max	25 th P	75 th P	No. of Obs.
Cash Holdings	0.3079	0.0802	0.6545	0.0000	4.0990	0.0183	0.2749	1446
Total Gov. Score	66.27	67.00	15.41	27.00	98.00	54.00	78.00	1615
Board Composition	23.82	23.00	7.70	2.00	40.00	18.00	30.00	1615
Compensation	14.51	14.00	5.37	0.00	26.00	10.00	18.00	1615
Disclosure	8.07	8.00	3.34	0.00	15.00	5.00	11.00	1615
Shareholder Rights	19.40	20.00	5.96	2.00	31.00	15.00	24.00	1615
Current Assets	1133.79	530.68	1626.43	25.95	8873.00	205.02	1223.10	1427
Cash & Cash Equivalents	330.04	106.27	618.59	0.00	3709.00	30.00	321.07	1447
Current Liabilities	866.26	336.90	1334.73	9.51	6758.00	104.90	883.40	1427
Assets(\$MM)	5526.88	2133.07	8298.64	91.06	40968.00	891.01	5261.00	1447
Sales(\$MM)	3752.48	1411.41	5994.46	10.41	31820.00	386.51	4017.00	1446
Capex	525.84	139.18	1032.77	1.91	6054.00	52.32	431.80	1446
R&D	68.29	16.47	226.23	0.00	1856.00	1.72	52.00	383
Total Debt	1299.78	435.53	2267.53	0.00	12187.00	96.84	1055.04	1445
Capex/ T.Assets	0.0925	0.0670	0.0805	0.0048	0.4043	0.0327	0.1293	1446
Liquidity	0.0193	0.0029	0.1076	-0.2882	0.3425	-0.0430	0.0772	1427
R&D/Sales	0.1267	0.0083	0.3543	0.0000	2.5572	0.0008	0.1019	383
C. Assets/T. Assets	0.2999	0.2658	0.1964	0.0253	0.8212	0.1379	0.4252	1427
Leverage	0.2008	0.1968	0.1440	0.0000	0.6065	0.0894	0.2975	1445
Size	7.7371	7.6653	1.3517	4.5115	10.6206	6.7924	8.5681	1447

4.2 Univariate Analysis

The median and mean levels of cash holdings and the governance variables ranging within the 1st and the 5th quintiles are reported in table 2. Once sorted on the basis of quintiles, we perform the median test to examine the equality of the medians i.e. whether these median values (mentioned in table 2) differ across the 1st and the 5th size quintiles. The results of the median test suggest that there is a significant difference in the median values between the 1st and the 5th quintiles for cash holdings and the governance variables. Further our results suggest that there is a significant difference in the median values of cash holdings between the 1st and the 5th quintiles, with small firms (size quintile = 1) having higher median level cash reserves when compared with bigger firms (size quintile= 5), and on the other hand, small firms have low scores in all the governance variables, when compared with governance scores of bigger firms.

We also performed the t test to check for differences in the mean values between the 1st and the 5th size quintile. Mean difference tests reported results similar to those of median test which signifies that mean and median values of cash holdings and governance variables are significantly different across small and large firms.

Table 2

In this table, we try to examine the relationship between cash holdings and governance variables based on the size of the firm. For this purpose, we sort the firm based on their size into quintiles each year. The variables used for this purpose is “size” which has been calculated by taking natural log of total asset value for a firm. Once firms are divided into 5 quintiles, we report the mean and median level of cash holdings and four governance variables (including disclosure, shareholder right, compensation and board composition) within these 5 quintiles. The governance variables here are expressed in percentage terms, calculated by dividing the actual score which company received in a particular category with the maximum score in that category (score received/ maximum score in the category).

MEDIAN VALUES

Size Quintile	Cash Holding	Disclosure	Shareholder Rights	Compensation	Board Composition	Total Gov. Score
Quintile= 1(smallest)	29.85%	50.00%	54.84%	38.46%	74.19%	56.00%
2	7.27%	58.33%	58.06%	50.00%	74.19%	64.00%
3	4.16%	75.00%	64.52%	61.54%	74.19%	66.00%
4	5.21%	83.33%	70.97%	61.54%	80.65%	73.00%
Quintile= 5(largest)	5.72%	83.33%	74.19%	69.23%	77.42%	76.00%

MEAN VALUES

Size Quintile	Cash Holding	Disclosure	Shareholder Rights	Compensation	Board Composition	Total Gov. Score
Quintile= 1(smallest)	85.39%	54.05%	54.67%	41.23%	74.33%	57.46%
2	51.18%	63.32%	57.75%	51.41%	75.99%	62.70%
3	13.69%	68.19%	60.82%	58.01%	74.40%	65.81%
4	33.95%	73.64%	68.67%	61.84%	80.66%	71.88%
Quintile= 5(largest)	13.69%	77.16%	70.41%	67.42%	79.54%	73.77%

In table 3 on page 27, we report the median values based on total governance score quartiles within the size quintiles. Initial look at the table suggests that, irrespective of the size, firms with high governance score (4th quartile G score) when compared with low governance score (1st quartile G score) have significantly higher disclosure, shareholder rights, compensation, board composition and total governance score uniformly across all size quintiles. The above results have been found to be statistically significant using the median test. We also performed the t test to check for differences in the mean values between the 1st and the 5th size quintile. Results presented by both the tests have been found to be consistent.

However, for cash holdings there has been mix results. For the firms in 1st, 2nd and 5th size quintiles, firms with high governance score (4th quartile G score) have lower median level cash reserves compared to firms in with low governance score(1st quartile G score) within similar size quintiles. These results are somehow inconsistent with study of Harford et al (2008) wherein they provided evidence from United States, that firm with weak governance structure have lower cash reserves. However our results are consistent with cross country study by Dittmar et al (2003) and Lins and Kalcheva (2004) in which they suggested that stronger shareholder rights are linked to lower cash holdings.

To further test the significance of the differences in median values based on governance score quartiles across various size quintiles, we perform the median test at 95% confidence level. The results of these tests signify that there is no statistically significant

difference between the cash holdings based on governance score quartiles at all levels of size quintiles. T test to check for differences in the mean values reveals similar results.

Table 3

This table is in extension to the previous table. In this table, we perform a double sort to ascertain the relation between governance variables and report the median values by total governance score quartile within the size quintiles. First we sort the firms on the basis of their size (i.e. natural log of total asset values for the firm) and then further sort the firms on the basis of their sum total score of all the four governance variables added together. Firms are sub categorized into 4 quartiles on the basis of the total governance score within each size quintiles. Firms are classified as “low” if they belong to the first quartile or classified as “high” if they belong to the fourth quartile. The governance variables here are expressed in percentage terms, calculated by dividing the actual score which company received in a particular category with the maximum score in that category (score received/ maximum score in the category). In the first column we report the median cash holding based on “high” and “low” total governance score within each size quintile.

	Cash Holdings	Disclosure	Shareholder Rights	Compensation	Board Composition	Total Gov. Score
Size Quintile= 1						
High G. Score(Strong Rights)	24.18%	100.00%	70.97%	55.77%	112.90%	81.00%
Low G. Score(Weak Rights)	34.38%	33.33%	48.39%	34.62%	54.84%	47.00%
Size Quintile= 2						
High G. Score(Strong Rights)	4.82%	91.67%	74.19%	73.08%	103.23%	83.00%
Low G. Score(Weak Rights)	13.18%	41.67%	45.16%	34.62%	58.06%	47.00%
Size Quintile= 3						
High G. Score(Strong Rights)	7.32%	91.67%	80.65%	73.08%	103.23%	83.00%
Low G. Score(Weak Rights)	3.26%	41.67%	48.39%	42.31%	51.61%	49.00%
Size Quintile= 4						
High G. Score(Strong Rights)	9.40%	91.67%	83.87%	80.77%	93.55%	87.00%
Low G. Score(Weak Rights)	8.98%	41.67%	51.61%	38.46%	51.61%	47.00%
Size Quintile= 5						
High G. Score (Strong Rights)	5.90%	91.67%	83.87%	78.85%	96.77%	87.00%
Low G. Score (Weak Rights)	7.68%	41.67%	35.48%	53.85%	54.84%	50.00%

4.3 Multivariate Analysis

Assuming a linear relationship exists between cash holdings and governance variable; in table 4 (page 30), we examine the relationship between cash holdings and governance and various control variables. For this purpose, cash holdings, the variable of interest, is the dependent variable that is natural log of cash to sales and governance variables along with various control variables serves as the independent variables. The coefficient of the governance variables directly addresses the predictions of our hypothesis.

In model 1, we assume cash holdings is a function of total governance score i.e.

cash holdings = f(total governance score). We regress cash holdings on only one independent variable, which is the total governance score. A total governance score is the sum total of all the governance variables and adds up to 100. A high governance score suggests stronger governance in a firm. The results in model 1 suggest a negative relationship between corporate governance and cash holdings. T value of (-3.50) further suggests that this inverse relationship is significant at 99% confidence interval. These initial results are inconsistent with evidence from the US market.

In model 2, we dissect the governance variable by adding the individual governance variables in the regression equation instead of the total governance score. Now we assume cash holding is a function of i.e. **Cash holdings = f (shareholder rights, compensation, board composition, disclosure).** We found that the dependent variable, cash holdings, has negative relationship with board composition and compensation, significant at 99%

confidence level. The other two governance variables, shareholder rights and disclosure do not have a significant relationship with cash holdings. This signifies that the negative sign in the total governance score perhaps comes from board composition and compensation.

Moving to model 3, we add size and non-governance control variables to our equation. The results are as expected i.e. firms with lower cash holdings tend to have higher leverage, liquidity and these firms make more investments through capital expenditures. On the other hand, firms with higher cash holdings are characterized by higher growth options, as they tend to spend more on current assets and research and development. The size variable suggests a positive relationship with cash holdings, suggesting bigger firms having more cash reserves. However with the addition of control variables, total governance score does not hold any significant relationship with cash holdings but the direction of the relationship does not change.

Model 4 is an extension to model 3, we use an alternative approach and try to examine whether the total governance score and control variables are related to the changes in cash holdings of a firm. This will provide us with evidence as to the ability of firm's governance to predict the future cash holdings of the firm, by controlling for the lagged value of the cash holdings. For this we add the lagged value of the cash holdings to our existing regression model. Adding the lagged value of cash holdings in the equation takes care of the endogeneity and the results suggest a significant negative relationship between cash holdings and total governance score (i.e. 10% significance level). The results for the control variables have been consistent when compared with the previous model.

Table 4

In column 1 we regress cash holdings on the total governance score and control variables. The dependent variable cash holding is calculated by taking natural log of cash/ sales ratio. The independent variables in this case are the four governance variables (i.e. board composition, shareholder rights, compensation and disclosure) and their sum total score. The other independent variables include the lagged value of cash holdings and firm specific control variables: size which is natural log of total assets, ratio of capital expenditure to total assets (capex/ total assets), ratio of current assets to total assets, ratio of working capital to total assets as a measure of firm's liquidity, ratio of total debt to total assets as measure of firm's leverage. Models 1 through 3 apply the same sample using different independent variables. Z Statistics are reported in parenthesis.

Dependent Variable: Cash holdings	Model (1)	Model (2)	Model (3)	Model (4)
Total Score	-0.0116*** (-3.50)		-0.0017 (-0.43)	-0.0072** (-1.65)
Board Composition		-0.5185*** (-3.19)		
Compensation		-0.7960*** (-3.78)		
Shareholder Rights		0.1020 (0.39)		
Disclosure		-0.0267 (-0.21)		
Size			0.2020*** (2.39)	0.2920*** (3.69)
Leverage			-1.1733*** (-2.42)	-0.8098** (-1.66)
R&D/Sales			1.2134*** (6.66)	.9156*** (4.77)
Liquidity			-2.5097*** (-4.55)	-1.6495*** (-2.63)
CapEx/Total Assets			-5.9200*** (-4.97)	-1.3037 (-1.01)
Sales			-0.00004*** (-2.75)	-0.0001*** (-3.91)
C.Assets/ Total Assets			3.5701*** (10.00)	41.9722*** (4.88)
Cash Holdings_(t-1)				0.5562*** (12.56)
Constant	-1.5888	-1.5722	-4.2824	-3.0732

Finally, we examine the effect of size of the firm on the relationship between cash holdings and governance variables and the control variables. For this we divide the firm into 5 size quintiles. Below we report the results for 1st size quintile (smallest size firms) and the firms in the 5th quintile (biggest size firms)

Table 5

In column 1 we regress cash holdings on the total governance score and control variables. The dependent variable cash holding is calculated by taking natural log of cash/ sales ratio. The independent variables in this case are the four governance variables (i.e. board composition, shareholder rights, compensation and disclosure) and their sum total score. The other independent variables include the lagged value of cash holdings and firm specific control variables: size which is natural log of total assets, ratio of capital expenditure to total assets (capex/ total assets), ratio of current assets to total assets, ratio of working capital to total assets as a measure of firm's liquidity, ratio of total debt to total assets as measure of firm's leverage. Second column represents results for firms in the 1st size quintile (small size firms), whereas column 2 represents results for firms from the 5th size quintile (biggest size firms). Models 1 through 3 apply the same sample using different independent variables. Z Statistics are reported in parenthesis

Dependent Variable: Cash holdings	SIZE QUINTILE 1 (NO. of obs. 272)			SIZE QUINTILE 5 (NO. of obs. 273)		
	Model (1)	Model (2)	Model (3)	Model (1)	Model (2)	Model (3)
Total Score	-0.0114** (-1.66)	-0.0113*** (-2.17)	-0.0167*** (-2.84)	-.0052 (-0.67)	-.0051 (-0.32)	-.0069 (-0.32)
Size		0.6078*** (4.02)	1.0917*** (5.23)		1.4306*** (3.25)	1.0204** (1.95)
Leverage		-1.9231*** (-2.50)	-2.5076*** (-2.53)		-0.6688 (-0.48)	-1.0202 (-0.67)
R&D/Sales		0.9966*** (7.14)	.8909*** (5.83)		-6.2811 (-0.90)	-4.5346 (-0.72)
Liquidity		-2.0053*** (-3.38)	-0.7500 (-0.94)		-2.9758 (-0.84)	-2.2155 (-0.51)
CapEx/Total Assets		-7.3854*** (-6.09)	0.0597 (0.03)		-2.9967 (-0.98)	-6.5401** (-1.76)
Sales		-0.0030*** (-5.90)	-0.0028*** (-5.65)		-0.0001*** (-3.91)	-0.0001*** (-3.05)
C.Assets/ Total Assets		2.2659*** (5.63)	3.0216*** (5.46)		8.0159*** (4.46)	5.5288*** (2.45)
Cash Holdings_(t-1)			0.2895*** (3.88)			.0917 (0.59)
Constant	-.5766	-3.9172	-6.9847	-2.3599	-16.0658	-11.1743

In previous table, we segregate the regression analysis on the basis of the size of the firms. For this purpose we divided the firms into 5 size quintiles and reported the results for the firms in the 1st and the 5th size quintiles. It is quite evident from the results that, small size firms show a very significant inverse relationship with between cash holdings and governance. In spite of adding the control variables, total governance score has a significant relationship with cash holdings. The non-governance control variables have expected signs and have shown results consistent with the overall results. Small size firms with low cash holdings tend to have higher capital expenditure and have higher debt, which is indicated by higher leverage. On the other hand, small size firms with high cash holdings spent more on research and development and current assets rather than long-term measures like capital expenditures.

For larger firms (size quintile 5), even though governance has a negative relationship with cash holdings, but the results are not very significant. Even the control variables in these firms have shown relationship, which has been consistent with the overall results, but this relationship is not significant so as to draw any conclusion from it.

We can conclude from the above results that negative relationship between cash holdings and governance can be attributed to the small size firms in Canada. These firms have shown more consistent results with different measures. The overall regression results for the Canadian market, mentioned in table 4 on page 30 are in sync with the results for small size firms. On the other side, big size firms have shown results, which are inconsistent with the overall results, and hence we cannot draw any conclusion for them.

Chapter 5: CONCLUSION

We initiate this by establishing that Canadian firms with stronger governance tend to hold lower cash reserves. The overall payout results suggest that, firms choosing to spend some of their cash tend to differ in methods of spending, which depends on the governance structure of the firm. Firms with strong governance and low cash holdings tend to have higher capital expenditures, whereas entrenched managers with high cash reserves spend more on research and development and current assets. Further insight into the Canadian market reveals that, small size firms have shown stronger consistency with these overall results whereas bigger firms have shown results, which are inconsistent with the overall market. This is consistent with the assumption that investors in companies with poor shareholder protection cannot force managers to disgorge excessive cash balances.

This was a country specific study, which provides an overall view of how governance in Canadian firm affects its cash holdings. Despite its geographical proximity to the United States, the results in Canadian market have been contrasting to that of the Harford (2008) in context of the United States, and are more in sync with the overall global results as sighted by Dittmar (2003).

This research presents a platform for future research in similar context that will further confirm the interpretation of our results. There is a further scope to study the impact of governance on profitability and valuation of Canadian firms i.e. how do governance structure affects the overall valuation and profitability of the firms in Canada.

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APPENDIX A

Components of Globe and Mail Corporate Governance Score

Board composition, which is the first component, has a weightage of 31 points out of 100. Points are granted for percentage of directors who are fully independent. Additional points are awarded for independence of audit committee, compensation committee (committee that determines the pay to executives) and nominating committee (responsible for recommending new directors). The presence of a formal system to assess the performance of directors and the board along with various other factors are taken into consideration.

Second component deals with issues related to shareholding and compensation, which comprises of 26 points. Apart from permission to own stock by directors this includes number of shares owned by directors, efficiency of company to disclose compensation policies and total value of CEOs accumulated shares and disclosure of performance appraisal plan of the company.

Third component, which is shareholder rights, has a weightage of 31 points out of the total score of 100. This component evaluates the company on issues like whether the company allows the shareholders to vote for individual directors. McFarland (2002) mentions that marks are awarded if there is no distinction between voting and equity rights of shareholders. Furthermore, this component looks into issues like excessive dilutive nature of employee stock options and grant rate of stock options.

The fourth component deals with disclosure issues and this is worth 12 points out of 100. Marks are awarded if company provides a detailed explanation of relationship between

directors, attendance of directors at meetings, age of directors, a mention of skill matrix in proxy circular, which specifies the area of expertise of each director. Overall this component deals with the quality of disclosed information as per the requirements specified by OSC (Ontario Securities Commission). Full marks are awarded if the company fully incorporates all the disclosure requirements of OSC.