How does Corporate Governance Affect Free Cash Flow?

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Abstract

According to the free cash flow hypothesis, large free cash flows are likely to lead to managerial discretion and agency problems. This is because retaining free cash flows reduces the ability of capital market to monitor managers. The aim of this study is to examine the relationship between corporate governance and free cash flow for a sample of Canadian companies. This study does not find evidence supporting the agency costs of free cash flow hypothesis. The results show that better governed firms have larger free cash flows. The increased free cash flows can be a result of better internal operating efficiency.

1   Introduction

Agency problems arise when there is a separation of ownership and control. Due to incomplete contractual relationship, managers (the agents) may not act in the best interests of the shareholders (the principals) (Jensen and Meckling, 1976). The free cash flow hypothesis proposed by Jensen (1986) suggests that when managers have more cash than is needed to fund all profitable projects, they are likely to waste the free cash on value-decreasing investments. The hypothesis implies that high levels of free cash flow may result in lower firm value and higher agency costs to shareholders.

Tests on the free cash flow hypothesis have reported mixed findings. Some studies, including Brush et al. (2000) and Chung et al. (2005), find support for the free cash flow hypothesis. Brush et al. (2000) show that free cash flow reduces the positive influence of sales growth on performance. Chung et al. (2005) report that excessive free cash flow is negatively associated with corporate profitability and share valuation. Carroll and Griffith

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(2001) test the free cash flow hypothesis in the context of market for corporate control also find evidence consistent with the free cash flow hypothesis. Specifically, they find that white knights that do not have positive NPV projects tend to waste the free cash flow and excess debt capacity on value-decreasing acquisitions. In contrast, hostile bidders, which usually do not have high free cash flow, do not waste the free cash flow on buying negative NPV targets.

On the other hand, some studies find evidence inconsistent with the free cash flow hypothesis. For example, Gregory (2005) examines the long-run abnormal performance of UK acquirers and reports that acquirers with higher FCF have better performance. Chang et al. (2007) find that investors prefer companies with large free cash flow and profitable investment opportunities. Wang (2010) finds that free cash flow is positively related to firm performance. Chen et al. (2012) reports that prior to the split share structure reform in China, firms with weaker governance have greater reductions in cash holdings.

In the presence of agency problems, corporate governance is essential in alleviating the agency costs and protecting shareholders' interests. The aim of this study is to examine the relationship between corporate governance and free cash flow. That is, we test if firms with better corporate governance are associated with lower free cash flow. Understanding how corporate governance affects free cash flow can help market investors at large know whether sufficient governance mechanisms are in place to monitor managers and to protect their interests.

The agency model identifies a number of governance mechanisms that can be used to realign the interests of shareholders and managers. This study contributes to the literature by adopting a corporate governance index which considers several facets of corporate governance, including board composition, shareholding and compensation, shareholder rights, and disclosure. In contrast, previous studies have typically examined only one or two elements of corporate governance, such as board characteristics (McKnight and Weir, 2009), ownership structure (McKnight and Weir, 2009; Fatma and Chichti, 2011) and board committee characteristics (McKnight and Weir, 2009; Adinehzadeh and Jaffar, 2013), and neglects other possible governance mechanisms.

Specifically, Adinehzadeh and Jaffar (2013) examine Malaysian companies and find that the characteristics of audit committee, including the size of audit committee, frequency of audit committee meeting, and the proportion of audit committee independence, are positively associated with the level of free cash. They show the important governance role of audit committee in monitoring managers and in the management of cash flow. Fatma and Chichti (2011) adopt a three-stage least square simultaneous model and find that debt policy is the main governance mechanism in limiting free cash flow. In addition, managerial ownership has a negative effect on the level of free cash flow while ownership concentration is positively related to free cash flow. Institutional ownership is not significantly associated with free cash flow.

The results from this study do not support Jensen's (1986) free cash flow hypothesis. Based on a sample of Canadian companies between 2009 and 2012, we find that firms with higher corporate governance scores have larger free cash flows. The results are consistent with the findings of Gregory (2005) and Wang (2010) and suggest that increased free cash flows can be a result of better internal operating efficiency. High free cash flow firms are found to have good firm performance and are associated with high ROE and Tobin's Q although the result on ROE is statistically insignificant.

This paper is structured as follows. The following section reviews the prior empirical literature on free cash flow and corporate governance, and develops the hypothesis tested

in this study. Then, we describe the sample and data, and specify the model. Finally, we present the empirical results and provide conclusions from this study.

2　Literature Review and Hypothesis Development

The basic idea of agency theory is that the agents (or managers) are prone to maximize his self-interests. Jensen (1986) suggests that the existence of free cash flow intensifies this problem and increases the potential conflicts of interests between managers and shareholders as managers have discretion over the use of free cash flow. There is an increased risk that managers may spend this money on unprofitable projects rather than returning the money to shareholders, for example, in the form of dividends. According to Brush et al. (2000), the agency theory lies on three premises. First, managers are motivated to meet their self-interests and maximize their own wealth. Secondly, the presence of free cash flow could lead to managerial waste and inefficiency. Thirdly, weak corporate governance increases the agency costs to shareholders. Jensen (1993) argues that the free cash flow problem was the reason that the investment return fell below the required rate of return in the US companies in the 1980s.

Wang (2010) examines the relationship between free cash flow and agency costs and how free cash flow and agency costs affect firm performance. Wang (2010) finds two counter effects that free cash flow has on agency costs. Free cash flow can increase agency costs due to managerial perquisite consumption. On the other hand, free cash flow can be associated with lower agency costs if the free cash flow is a result of better operating efficiency. Wang (2010) shows that agency costs is significantly negatively associated with firm performance while free cash flow is significantly positively related to firm performance. The former result supports the agency theory while the latter is inconsistent with the free cash flow hypothesis.

McKnight and Weir (2009) examines the relationship between corporate governance and agency costs, measured by the ratio of sales to total assets, the interaction of free cash flow and growth prospects, and the number of acquisitions. Their evidence based a sample of large UK publicly quoted companies shows that increasing board ownership and debt reduce agency costs. However, changes in board structures barely have any impact on agency costs and having a nomination committee increases, rather than lowers, the agency costs.

The level of free cash flow proxies for the agency costs to shareholders. Previous studies suggest that corporate governance mechanisms are effective in lowering agency problems and maximizing firm value (Boone et al., 2007; Coles et al., 2008; Chi and Lee, 2010). For example, Chi and Lee (2010) examine the relationship between corporate governance and firm value conditional on the level of free cash flow available to managers. They find that corporate governance affects firm value differently depending on whether the firm has high or low free cash flow. Specifically, firm value increases with better governance quality among high free cash flow firms while the governance effect is lower or insignificant among low free cash flow firms. Francis et al. (2013) shows that firms' investment-cash flow sensitivity increases when firms have poor corporate governance.

Moreover, a number of studies, including Richardson (2006), Cai (2013) and Chen et al. (2015), examine the relationship between free cash flow, corporate governance and over-investment in China and find evidence consistent with the free cash flow hypothesis. Firms with higher free cash flow show more pronounced over-investment. Cai (2013)

finds that the positive relationship between over-investment and free cash flow is driven largely by the state-owned enterprises sub-group. Chen et al. (2015) further report that some governance structures, such as concentrated ownership and larger board size of supervisors, can alleviate the over-investment problem.

Accordingly, corporate governance is expected to lower the free cash flow problem and based Jensen's (1986) free cash flow hypothesis, the following hypothesis is tested:

H1: Firms with higher corporate governance scores have lower levels of free cash flow.

3 Data and Method

3.1 Sample and Data

The sample is based on firms listed on the S&P/TSX composite index for the period 2009-2012. The corporate governance scores are obtained from The Globe and Mail (G&M). The G&M provides annual corporate governance rankings and companies are given the scores on board compositions, shareholding and compensation, shareholder rights, and disclosure. The reason for choosing this sample period, 2009-2012, is that there were modifications to composites of the index. Several criteria were added to the disclosure assessments of the index in 2009 and in 2013. To ensure consistency in corporate governance measurements, the sample period is constrained to this time period 2009-2012. Accounting and financial data are obtained from the Standard & Poor's Compustat database. Firms that do not have all the required financial and accounting data for the entire period are eliminated from the sample. The final sample consists of 452 firm-year observations.

3.2 Empirical Model

To examine how corporate governance affects the level of free cash flow, the following model is developed and tested using a panel regression model:

$$FCF_{it} = \alpha_i + \beta_1 CG_{it} + \beta_2 FSIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 ROE_{it} + \beta_5 CAPEXP_{it} +$$
$$\beta_6 TOBINQ_{it} + \beta_7 RETAIN_{it} + \beta_8 DIV_{it} + \beta_9 TAX_{it} + \beta_{10} INDUSTRY_{it} + \varepsilon_{it}$$

$$(1)$$

The dependent variable of Model 1 is free cash flow, measured by the ratio of free cash flow (defined as the net cash flow from operating activities minus capital expenditures) to book value of assets. Firms with larger free cash flow are likely to suffer from greater agency problems.

The main variable of interest in this study is corporate governance score (CG). The free cash flow hypothesis (Jensen, 1986) suggests that firms with abundant free cash are more likely to engage in value-decreasing investment and suffer from greater agency problems. This is because retaining free cash flows reduces market monitoring on managerial actions and managers are able to pursue personal goals without the need to raise funds from bond or equity markets. Strong corporate governance can help align managers' and shareholders' interests. Therefore, this study tests if firms with better corporate

governance in place are associated with lower agency problems and thus lower free cash flow.

Other variables that have been suggested by previous studies as having an influence on free cash flow are also included in our analyses as control variables and are discussed below. Firm size, measured by natural logarithm of total assets, is included as a control variable. Larger firms have more access to outside resources and are less dependent on internal funds (Fama and French, 2001; Denis and Osobov, 2008). Therefore, larger firms have less need to hold the free cash flow. Accordingly, firm size is expected to be negatively associated with free cash flow.

Leverage, defined as the ratio of total debt to total assets, is controlled for because debt can limit managers' discretionary behavior on free cash flow (Jensen, 1986; Stulz, 1990). Managers are subject to regular debt repayments. Hence, debt can lower the opportunistic behavior of managers and can be considered as a substitute corporate governance mechanism for alleviating the potential free cash flow problem (Renneboog and Trojanowski, 2007; Setia-Atmaja et al., 2009). An opposing view is that debt may aggravate the agency conflicts between shareholders and creditors due to the wealth transfer from shareholders to bondholders (Fatma and Chichti, 2011). Therefore, the relationship between leverage and free cash flow is not clear.

Firm profitability is also controlled for and is measured by return on equity (ROE). Firms with higher profitability have more net income and therefore, a positive relationship with free cash flow is expected. Growth opportunities (defined as the ratio of capital expenditure to total assets) proxy for future cash flow needs for investment and operating activities (Adjaoud and Ben-Amar, 2010; Chang and Dutta, 2012). Firms with high growth prospects are more likely to be better managed (Opler and Titman, 1993) while firms with low growth opportunities have less profitable investments and are likely to have more serious free cash flow problem. Therefore, growth opportunities are controlled for and lower growth opportunities are expected to be associated with higher free cash flow.

Following Lang et al. (1991), we measure investment opportunities with Tobin's Q, defined as the ratio of market value of equity plus the book value of debt to the book value of assets. Tobin's Q has been used by Lang et al. (1991) and Brush et al. (2000) to identify if there are positive net present value projects available to firms. Firms with higher investment opportunities are expected to have less free cash flow. Moreover, firms with higher retained earnings (measured by the ratio of retained earnings to total equity) are likely to have more free cash flow. Hence, we expect a positive relationship between retained earnings and free cash flow.

The free cash flow hypothesis proposed by Jensen (1986) suggests that firms may reduce the agency costs of free cash flow by distributing the free cash to shareholders through dividend payments. Therefore, dividend payout measured by dividend yield (that is, the ratio of cash dividend per share to price per share) is controlled for. Firms with higher free cash flow are able to paid out more dividends and therefore a positively relationship is expected between free cash flow and dividend payout.

Table 1: Variable descriptions

Variable	Symbol	Exp Sign	Description
Dependent variable			
Free cash flow	*FCF*		Ratio of free cash flow (defined as net cash flow from operating activities minus capital expenditures) to book value of assets.
Independent variable			
Corporate governance	*CG*	-	Corporate governance score is collected from *The Globe and Mail*.
Control variable			
Firm size	*FSIZE*	-	Natural logarithm of total assets.
Leverage	*LEVERAGE*	+/-	Ratio of total debt to total assets.
Profitability	*ROE*	+	Ratio of net income to shareholder equity.
Growth opportunities	*CAPEXP*	-	Ratio of capital expenditure to total assets.
Investment opportunities	*TOBINQ*	-	Ratio of market value of equity plus the book value of debt to the book value of assets.
Retained earnings	*RETAIN*	+	Ratio of retained earnings to total equity.
Dividend yield	*DIV*	+	Ratio of cash dividend per share to price per share.
Taxation	*TAX*	-	Ratio of income tax to net income.
Industry dummy	*INDUSTRY*	+/-	Dummy variable that equals one if the firm belongs to the industrial sectors, including agriculture, forestry, fishing, mining, construction and manufacturing sectors, or 0 otherwise.

Taxation, defined as the ratio of income tax to net income, will reduce the profits and thereby the amount of free cash available. Therefore, taxation is expected to be negatively associated with free cash flow. To control for possible variations across industries, we include a dummy variable for industrial sectors. Table 1 provides the definitions of all relevant dependent, independent and control variables used in the analyses.

4   Results

Table 2 reports the descriptive statistics for the data. The median FCF is 2.07%. The maximum and minimum FCF are 34.04% and -54.72%, respectively. The median corporate governance score is 69. The maximum and minimum score are 97 and 27, respectively. The median LEVERAGE and ROE are 18.18% and 10.39%, respectively.

Table 2: Descriptive statistics

	Mean	Median	Max	Min	SD
FCF (%)	1.96	2.07	34.04	-54.72	9.60
CG	68.13	69.00	97.00	27.00	16.03
Total assets ($m)	47,112.14	6,656.85	825,100.00	283.81	127,810.90
LEVERAGE (%)	19.80	18.18	60.49	0.00	14.45
ROE (%)	10.15	10.39	278.08	-250.29	21.46
CAPEXP (%)	6.80	5.45	41.74	0.00	6.16
TOBINQ (%)	113.81	101.20	535.16	6.29	76.89
RETAIN (%)	35.82	53.52	94.45	-438.62	60.31
DIV (%)	2.26	1.93	21.46	0.00	2.08
TAX (%)	0.31	0.33	15.46	-7.11	1.25

FCF is the ratio of free cash flow to book value of assets. *CG* is the corporate governance score. *LEVERAGE* is the ratio of total debt to total assets. *ROE* is the ratio of net income to shareholder equity. *CAPEXP* is the ratio of capital expenditure to total assets. *TOBINQ* is the ratio of market value of equity plus the book value of debt to the book value of assets. *RETAIN* is the ratio of retained earnings to total equity. *DIV* is the ratio of cash dividend per share to price per share. *TAX* is the ratio of income tax to net income.

Table 3 presents the correlation matrix. It shows that FCF is significantly negatively associated with FSIZE, LEVERAGE, and CAPEXP while significantly positively related to ROE, TOBINQ, RETAIN and DIV. The correlation results suggest that larger firms are less dependent on internal funds and therefore hold less free cash flow. The negative relationship between LEVERAGE and FCF suggests that debt can be a governance mechanism for alleviating the agency costs of free cash flow problem. Higher growth opportunities, measured by capital expenditures ratio, are associated with less free cash flow, as expected. However, better profitability (or ROE) and higher investment opportunities, measured by Tobin's Q, are associated with more free cash flow. The latter result is inconsistent with the prediction. One possible reason is that Tobin's Q also proxies for firm value. Firms that perform well will have higher firm value and more free cash flow. Higher FCF is also found to be associated with higher retained earnings and higher dividend yield. The findings are consistent with the predictions.

Table 3: Correlation analysis

	FCF	CG	FSIZE	LEVERA	ROE	CAPEX	TOBIN	RETAI	DIV	TA
FCF	1.0									
CG	0.0	1.0								
FSIZE	-0.0 **	0.4 **	1.0							
LEVERA	-0.0 **	0.1 **	0.0	1.00						
ROE	0.1 **	0.0 *	0.1 **	0.00	1.0					
CAPEXP	-0.4 **	-0.1 **	-0.3 **	0.07	-0.0	1.0				
TOBINQ	0.1 **	-0.1 **	-0.5 **	-0.0	0.1 **	0.3 **	1.0			
RETAIN	0.1 **	0.0	0.2 **	-0.1 **	0.1 **	-0.0 *	-0.0	1.0		
DIV	0.1 **	0.1 **	0.3 **	0.26 ***	-0.0	-0.2 **	-0.3 **	-0.1 **	1.0	
TAX	0.0	-0.0 *	-0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	1.0

FCF is the ratio of free cash flow to book value of assets. *CG* is the corporate governance score. *FSIZE* is the natural logarithm of total assets. *LEVERAGE* is the ratio of total debt to total assets. *ROE* is the ratio of net income to shareholder equity. *CAPEXP* is the ratio of capital expenditure to total assets. *TOBINQ* is the ratio of market value of equity plus the book value of debt to the book value of assets. *RETAIN* is the ratio of retained earnings to total equity. *DIV* is the ratio of cash dividend per share to price per share. *TAX* is the ratio of income tax to net income. *, **, *** denote significance at the 10%, 5% and 1% levels, respectively.

Table 4 presents the random effect panel regression results. The results show that better governed firms have more free cash flow. Consistent with the findings of Gregory (2005) and Wang (2010), this study finds evidence inconsistent with the free cash flow hypothesis. The positive relationship between corporate governance score and free cash flow can be explained by the fact that increased free cash flow could be a result of better internal operating efficiency. Our study finds that firms with high free cash flow are well performing firms and are associated with higher ROE and Tobin's Q although the result on ROE is statistically insignificant. Smaller firms are also found to be associated with higher free cash flow. The finding is consistent with the prediction and prior correlation results.

Table 4: Analysis of free cash flow and corporate governance

Intercept	9.867 **
	(2.413)
CG	0.080 **
	(2.504)
FSIZE	-1.187 ***
	(-2.950)
LEVERAGE	-0.044
	(-1.273)
ROE	0.014
	(0.994)
CAPEXP	-0.940 ***
	(-13.480)
TOBINQ	0.026 ***
	(3.826)
RETAIN	0.015 **
	(2.070)
DIV	0.287
	(1.207)
TAX	-0.026
	(-0.118)
INDUSTRY	Yes
Adjusted R^2	0.314
Total obs	452

FCF is the ratio of free cash flow to book value of assets. *CG* is the corporate governance score. *FSIZE* is the natural logarithm of total assets. *LEVERAGE* is the ratio of total debt to total assets. *ROE* is the ratio of net income to shareholder equity. *CAPEXP* is the ratio of capital expenditure to total assets. *TOBINQ* is the ratio of market value of equity plus the book value of debt to the book value of assets. *RETAIN* is the ratio of retained earnings to total equity. *DIV* is the ratio of cash dividend per share to price per share. *TAX* is the ratio of income tax to net income. *, **, *** denote significance at the 10%, 5% and 1% levels, respectively.

5 Conclusion

This study tests the efficiency of corporate governance mechanisms in alleviating agency conflicts between shareholders and managers due to the free cash flow problem. The free cash flow hypothesis proposed by Jensen (1986) suggests that when there is excess cash flow after funding all positive net present value projects, managers are likely to waste it on unprofitable projects or on organization inefficiencies. Previous literatures have

suggested that governance may operate through many different mechanisms, such as ownership structure (Tosi and Gomez-Mejia, 1989), board structure (Fama and Jensen, 1983), director compensation (Bebchuk and Fried, 2003). This study adopts the corporate governance index provided by The Globe and Mail (G&M) and examines the relationship between corporate governance and free cash flow.

The results show that governance mechanisms do not limit the risk of free cash flow based a sample of 452 Canadian companies for the period 2009-2012. The evidence from this study does not support Jensen's (1986) free cash flow hypothesis, which suggests that firms with higher free cash flow are likely to have more serious agency problems. In contrast, our study finds that firms with high free cash flow are well governed and well performing firms.

An implication from this study is that free cash flow itself may not be a bad thing as it may be a result of better operating efficiency and may be used to generate higher firm value. The more important focus is how this free cash flow is being spent. For future research, to test the free cash flow hypothesis, it is suggested to examine the use of free cash flow directly.

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