Corporate governance, financing patterns and the cost of capital

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Abstract

In this paper, we examine the effects of corporate governance mechanisms on financing policies in a research setting where agency problems and external financing constraints are expected to be high and restrictive. Using a unique self-constructed corporate governance index and employing the Fama and French (1999) financing model of firms, we find that firms with weak corporate governance mechanisms have more leverage than do firms with strong governance mechanisms. After controlling for the effects among corporate governance components, we observe that firms with different levels of corporate governance quality use different corporate governance mechanisms in relation to their financing policies. Our results suggest that firms can dynamically adjust their leverage as a governance mechanism through compensation policy and shareholder rights.

JEL classification: G30, G32

Key Words: Corporate governance, financing policy, cost of capital

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1. Introduction

Does corporate governance have significant impact on financing policy of a company? This paper attempts to investigate this issue by examining financing patterns of firms with strong and weak corporate governance mechanisms in the New Zealand stock market where agency problems and external financing constraints are expected to be high and binding.

Our study is motivated on the premise that, not only because the literature on the relationship between corporate governance and firm financing policy is still inconclusive, but also because most extant studies in this literature mostly use a specific corporate governance provision as a proxy for corporate governance mechanism (see for example, Berger *et al.*, 1997; Wen *et al*., 2002; Abor, 2007; Jiraporn and Liu, 2008; John and Litov, 2010)[1]. We posit that focusing only on a specific governance provision could be attributed to the mixed results as the literature also reports that firms could use a corporate governance component as a substitute or a complement to one another in addressing agency problems (Chen and Steiner, 1999; Chae, Kim and Lee, 2009; Eckbo and Verma, 1994; Agrawal and Knoeber, 1996; Rediker and Seth, 1995; Klapper and Love, 2004; Miguel *et al*., 2005; Rutherford *et al.,* 2007). Firms with weak shareholder protection, for example, could improve investor protection by increasing disclosure, selecting a more independent board, aligning incentives or imposing disciplinary mechanism on the management (Klapper and Love, 2004; Ward *et al.,* 2009). Likewise, firms with staggered boards could also improve shareholder protection by limiting the dilution effects of stock options or non-voting shares. These findings suggest

[1] An exception is a recent study by Mande, Park, & Son (2012).

that focusing on only one specific aspect of corporate governance may explain the inconclusive results on the effects of governance mechanisms on financing policy.

Our study is different from prior studies in several aspects. First, we employ a comprehensive corporate governance index based on several corporate governance provisions from a sample of New Zealand companies. Employing a more comprehensive measure of corporate governance mechanism instead of focusing only on one particular aspect of corporate governance provision is expected to mitigate possible substitution or complementary effects of such provision with another. The only study using total governance index in relation to financing policy is Mande et al. (2012). In our study, we use several governance sub-indices in addition to total index which enable us to examine which part of governance mechanisms is more relevant to firm financing policy. Second, we examine the impact of corporate governance of firms with strong and weak governance mechanisms on their financing policies. Focusing on these two extreme groups of firms is expected to facilitate us to draw more unequivocal inference from the results on the effects of corporate governance on financing policy. Third, our study is the first to look at the firms' financing policies using the Fama and French (1999) model. This approach not only enables us to observe whether firms with strong corporate governance scores use a different financing policy than do those with weak scores but also allows us to examine the effects of different corporate governance mechanisms on firms' financing policies as well as on their costs of capital. There is as yet limited empirical work on this issue; our paper fills this void, albeit for a country with a small and less-developed stock exchange, viz.: New Zealand.

New Zealand is a member of OECD countries but its market characteristics are different from those of the US. Although New Zealand has adopted the global best practice regarding corporate governance, there are significant institutional differences in New Zealand as

compared to countries such as the UK and USA, which use similar corporate governance codes. Previous research has also indicated that institutional features and the level of financial development at the country level impact firms' performance and their access to external finance (see among others, La Porta et. al, 1997 and Love, 2003). Chae, Kim and Lee (2009) find that external financing constraints can have significant effect on the relations among corporate governance, agency problem and financing policy. They report that depending on the relative sizes of agency problems and external financing constraints, firms may use governance mechanisms as a substitute or a complement for payout policy. New Zealand is a relatively much smaller economy where the capital markets are not nearly as well-developed, has a large number of firms having small market capitalisation, has all firm boards staggered and ownership concentration is extremely high. According to LaPorta (1997) and Love (2003), all these characteristics are consistent with high agency problems and restrictive external financing constraints. Thus, our findings in this paper could have implications for firms in other comparable OECD countries especially those under common law jurisdictions.

We find, in line with the existing literature, that the cost of capital of firms with high corporate governance scores are significantly lower than those in firms with low scores. We further find that, using the overall corporate governance score index and its sub-components, firms with weak corporate governance provisions are more leveraged than are firms with good governance mechanisms. After controlling the effects of different corporate governance components, we report that firms with different levels of corporate governance quality use different corporate governance mechanisms in relation to their financing policy. Our results also suggest that, through their compensation policy and shareholder rights provisions, firms can dynamically adjust their leverage as a governance mechanism.

The remainder of the paper is organised as follows. Section two briefly discusses the literature and the hypotheses of this study. Section three describes the methodology and the data. Section four discusses the empirical findings and section five concludes the paper.

2. Literature review and hypothesis development

Prior studies in finance literature suggest that the financing policies of firms, which comprise the firms' method of financing their investments, their capital structures and their cost of capital, are affected by agency problems generated by the separation of ownership and control. For example, Lundstrum (2009), DeJong and Veld (2001), Grossman and Hart (2004) and Friend and Lang (1988) report that firms with entrenched management, i.e., with weak governance, are more likely to issue equity than debt to protect themselves from external corporate governance forces. Other studies however, report that entrenched managers are associated with higher leverage. Harris and Raviv (1988) and Stulz (1988) find that entrenched managers may increase debt in an attempt to shield themselves from takeovers. John and Litov (2010) document that, as firms with entrenched management have lower costs of debt, entrenched managers are more likely to issue debt.

Despite these conflicting results, the effect of the agency problem, in which managers follow self-interested objectives at the expense of the shareholders, on firm value is real. When managers are likely to choose the less than optimal debt level in their capital structure decisions, their sub-optimal financing decisions will lower firm value and consequently increase cost of capital. Strongly governed corporations are expected to alleviate these problems by implementing such approaches as linking managers' incentives to firm value, effective monitoring by an independent board, preventing the dilution of firm value through

excessive use of stock options, or perhaps a combination of these approaches. A recent finding confirms our conjecture. Mande et al. (2012) find that firms with better corporate governance setup are more likely to issue equity than debt.

Several studies use a specific governance provision to investigate the association between corporate governance and firms' financing decisions with mixed results. For example, Berger *et al.* (1997) and Abor (2007) report a positive relationship between the presence of outside independent directors and leverage, but Wen *et al.* (2002) find the opposite, and yet another study find that outside directors have no significant effect on leverage (Mehran, 1992). Similarly, John and Litov (2010) provide evidence that antitakeover provisions are associated with higher leverage, but Jiraporn and Liu (2008) find that staggered boards, which is a component of antitakeover provisions, are negatively related with leverage.

The literature also provides evidence that good corporate governance has positive effects on firm operating performance and on cash holding (Core, Holthausen and Larcker, 1999; Gompers, Ishii and Metrick, 2003; Dittmar, Mahrt-Smith, 2007). These findings suggest that firms with good (weak) corporate governance have more (less) internal funding than that of firms with weak (good) corporate governance. Chae et al. (2009) suggest that firms take into account agency problems, external financing constraints and corporate governance when deciding on their financing policies. As firms with weak corporate governance mechanisms in place are expected to have less internal funding, they would rely more on debt. Thus, we hypothesise that:

H_1: Strongly (weakly)-governed firms are likely to rely more (less) on internal funding, they would issue less (more) debt to finance their investments.

Gompers et al. (2003) find that firms with entrenched management have higher cost of equity. With binding external financing constraints, these firms would incur higher issuing costs to finance their investments. Accordingly, as strongly-governed firms are expected to be able to finance their investments with lower costs of funding, we hypothesise that:

H_2: Firms with strong corporate governance setup have lower costs of capital than those of weakly-governed ones.

3. Methodology and Data

We construct a New Zealand Corporate Governance Index by creating three sub-indices for the following corporate governance mechanism: board composition, compensation policy, and shareholder rights. We then construct a total index by summing the values of the three sub-indices. The criteria we use to construct the sub-indices are similar to those of McFarland (2002).[2] A clear benefit of constructing our own governance indicator is that we are able to capture a wide variety of governance features specific to New Zealand firms. A potential drawback of this approach is that the list of corporate governance features and the weights assigned to each feature may be considered arbitrary. However, this criticism could be applicable to any constructed index, whether for professional or academic purposes. Overall, we believe that our detailed scoring system takes into account a wide range of aspects of firm governance and therefore provides a realistic score. Furthermore, the criteria used to create each of the sub-indices were previously applied in the Canadian context by Klein *et al*. (2005) and by Adjaoud *et al*. (2007).

[2] See the appendix for details.

The board composition sub-index measures board independence, CEO duality, busyness of the directors and the number of annual board meetings. This provision is an important governance feature (Fama and Jensen, 1983). The main responsibility of the board is to monitor managers' performance and reduce agency costs. Autonomy is measured by board independence, and by the independence of audit, compensation and nominating committees. Independent directors are expected to be able to monitor managers more effectively than inside directors (Jensen, 1993; Fama, 1980; and Baysinger and Hoskisson, 1990). This sub index also contains measures of board effectiveness, number of meetings and the separation of CEO/ Chair positions. The next sub-index is related to the share ownership and option plans of the directors. This sub-index captures the alignment between the interests of the directors and those of the shareholders. In the US, since 1994, directors are increasingly required to participate in the equity of the companies whose board they serve in (Hambrick and Jackson, 2000).[3] Chatterjee (2009) presents evidence consistent with the view equity holding by directors provides them with incentives for deeper strategic involvement with the firm and Kren and Kerr (1997) offer evidence consistent with the view that share ownership of directors provides them with incentives to rigorously monitor managerial performance. Finally, we measure shareholder rights based on the re-election of directors, existence of dilutive employee stock options and the presence of subordinate shares. These features reduce shareholder rights vis-a-vis managers. As such, firms with high scores on this sub index are considered investor friendly. The negative impact of the existence of dilutive stock options and subordinate shares will exacerbate poor performance of the firm under condition of economic stress. Adjaoud and Ben-Amar (2010) provide empirical results that suggest when shareholder rights are strong, shareholders can use their power to force

[3] In the majority of cases, the minimum shareholding is 1000 shares.

managers to pay higher dividends instead of using them for private benefit. Thus containing managers' opportunistic behavior is likely to make the firm less risky, ceteris paribus. Overall, we believe that these three major components of corporate governance aggregated into an overall score could provide a superior measure of corporate governance.

To observe a firm's financing pattern and its cost of capital, we adopt Fama and French's (1999) methodology. We use the following equation to observe how a firm finances itself:

$$Y_t + Dep_t + \Delta S_t + \Delta LTD_t = I_t + Int_t + Div_t \quad (1)$$

Y_t is defined as the sum of income before extraordinary items, interest, income statement deferred taxes and depreciation. Dep_t is the depreciation expenses. ΔS_t is the net newly issued shares, which balances the cash flow. ΔLTD_t is the change in the book value of the long-term debt. I_t is the change in book capital from t-1 to year t, plus depreciation. Int_t is the total interest expenses paid to creditors. Div_t is the total dividends paid to shareholders. All of the variables are deflated by the value of the year-beginning book assets. We do not include the change in short-term interest bearing liabilities in this equation because data for this variable are not available. As a result, we could slightly overstate ΔS_t. However, as the change in short-term interest bearing liabilities is usually small, this omission should not have a significant impact on ΔS_t.

To measure firms' cost of capital of firms for each year, we estimate the following equation:

$$IV_{t-1} = \frac{Y_t + Dep_t - I_t}{(1+r)^t} + \frac{FS_t - FB_t + \Delta LTD_t}{(1+r)^t} + \frac{TV_t}{(1+r)^t} \quad (2)$$

IV_{t-1} is the initial market value of a firm's capital in the sample at year t-1. We calculate the market value of a firm as the sum of its equity plus the book values of short-term and long-term debts. Y, I and LTD are as defined above. FS, FB and TV are the dollar amounts of the shares issued, buybacks and the market value capital of the firms, respectively; whereas *r* is the firm's cost of capital.

We then sort firms according to each index to observe whether firms in the top 33% of each index which are defined as firms with strong corporate governance, have a different financing pattern than that of firms in the bottom 33%, defined as firms with weak corporate governance.

To investigate whether firms with strong corporate governance mechanisms have different financing policies than those of firms with weak governance mechanisms, we run the following regression model:

$$\begin{aligned}\Delta LTD_{i,t} = \alpha &+ \beta_1 DBOARD\_Low \times BOARD_{i,t-1} + \beta_2 DBOARD\_High \times BOARD_{i,t-1} \\ &+ \beta_3 DCOMP\_Low \times COMP_{i,t-1} + \beta_4 DCOMP\_High \times COMP_{i,t-1} \\ &+ \beta_5 DRIGHTS\_Low \times RIGHTS_{i,t-1} + \beta_6 DRIGHTS\_High \times RIGHTS_{i,t-1} \\ &+ \beta_7 BLOCK_{i,t-1} + \beta_8 IE_{i,t-1} + \beta_9 PBI_{i,t-1} + \beta_{10} TTURN_{i,t-1} + \beta_{11} TA_{i,t-1} \\ &+ \beta_m INDUSTRY_{i,t} + \beta_n YEAR_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (3)$$

Strong (weak) corporate governance firms are firms in the top (bottom) 33 per cent when sorted according to the values of total index or its components. ΔLTD is the change in long term debt; DBOARD_Low is a dummy that takes the value of 1 for firms in the bottom 33 per cent when sorted according to the values of each index (Total Index or its components) and 0 otherwise; DBOARD_High is a dummy that takes the value of 1 for firms in the top 33 per cent when sorted according to the values of each index (Total Index or its components)

and 0 otherwise; BOARD is the Board Index; DCOMP_Low is a dummy that takes the value of 1 for firms in the bottom 33 per cent when sorted according to the values of each index (Total Index or its components) and 0 otherwise; DCOMP_High is a dummy that takes the value of 1 for firms in the top 33 per cent when sorted according to the values of each index (Total Index or its components) and 0 otherwise; COMP is the Compensation Policy Index, DRIGHTS_Low is a dummy that takes the value of 1 for firms in the bottom 33 per cent when sorted according to the values of each index (Total Index or its components) and 0 otherwise; DRIGHTS_High is a dummy that takes the value of 1 for firms in the top 33 per cent when sorted according to the values of each index (Total Index or its components) and 0 otherwise and RIGHTS is the Shareholder Rights Index. BLOCK is the cumulative percentage of shares held by shareholders who hold at least 5 per cent of ordinary shares in the firm. IE, PBI, TTURN and TA are the natural logarithms of Interest Expenses, Profit before Interest, Total Turnover and Total Assets, respectively. INDUSTRY and YEAR are dummy variables for firm industry and firm year.

We collect financial data and corporate governance variables from the annual reports of firms listed in the NZX Deep Archive database from 2004 to 2008. Because the price data from this database are not adjusted for stock splits and stock dividends, we collect price data to calculate the market value of the equity of the firms from the Datastream database. From the NZX Deep Archive database, we obtain 88 non-financial firms listed in 2004. The number of sample firms in our study is similar to that in prior studies on New Zealand firms (Orr *et al*., 2005; Hossain *et al*., 2000). We trim data that do not have the necessary variables for the regression and extreme firm variables that are below the 1st percentile and above the 99th percentile. Our final sample consists of 319 firm year observations.

4. Results

Table 1 provides descriptive statistics of the capital structures and financing components of all firms in the sample during the period from 2004 to 2008. On average, the equity of the firms (as a percentage of either market or book capital) is larger than their long-term debt. Common equity as a percentage of market (book) capital is 0.65 (0.56) and long-term debt as a percentage of market (book) capital is 0.16 (0.19). Table 1 also indicates that firms in the sample make gross investments that average 14 percent of their book capital. In addition, firms also make substantial payments to security holders. Average dividends and interest expenses account for 5 percent and 2 percent of book capital, respectively. Firms also reduce their long-term debt by 2 percent. These cash outlays are not fully supported by cash earnings however, as total cash earnings, Y + Dep, account for only 11 percent of book capital. As a result, firms in the sample make average net new issues of security of 12 percent.

[Please Insert Table 1 Here]

To examine whether firms with weak governance have different financing patterns relative to firms with strong governance, we sort the firms based on the values of the total index and of each index of the corporate governance subsets. We then divide the samples into three parts and classify firms as strong (weak) corporate governance firms if they are in the top (bottom) 33 per cent of each index.

Table 2 reports firm leverage as a component of market and book capital that is organised based on the total index and its sub-indices. Taken as a whole, consistent with H_1, our results suggest that weakly governed firms are more leveraged than are strongly governed ones. The

difference in the level of leverage is statistically significant across different governance mechanisms, except when sorted according to board composition index (Panel B). One possible explanation for the insignificant difference in the latter category could be that not all independent directors are truly independent or have the necessary skills and knowledge to effectively carry out their monitoring duties (Koerniadi and Tourani-Rad, 2012; Klein *et al*., 2005; Pham *et al*., 2007). Another possible reason is that board monitoring and other provisions may act as substitutes. When managerial incentives are aligned with shareholder interests through the firm's compensation policy, the need for the board to monitor management is reduced (Ward *et al.,* 2009).

[Please Insert Table 2 Here]

Table 3 focuses on how firms with different corporate governance levels finance their investments. Panel A shows that firms with strong governance invest around 12 per cent of book capital and pay dividends and interest expenses of 5 percent and 2 percent of book capital, respectively. Because cash earnings, Y + Dep, are not sufficient to finance these cash outlays (11 percent), these firms prefer to issue equity rather than debt to finance their expenditures. These financing patterns however, are not statistically different from those of firms with weak governance. The costs of capital of weakly governed firms are observed to be significantly higher than those of strong firms with high governance scores. This is consistent with H_2 and the previous related literature such as Chen *et al.* (2009) who find that firm-level corporate governance quality has a significantly negative effect on the cost of equity capital in countries with weak legal protection of investors. Financing patterns of

strong and weak governance firms are similar when sorted according to their board composition index (Panel B)[4].

When firms are ranked according to the compensation policy index (Panel C), firms that have aligned their managers' incentives with those of shareholders are observed to have sufficient cash earnings to finance their investments, whereas firms with a low compensation policy index do not have enough cash earnings and are likely to have issued more long term debt. Cash earnings average 13 percent and gross investments average 11 percent of book capital. However, when firms make payments to security holders, they issue equity (or short term debt) to finance these outflows. This finding is consistent with Mande et al. (2012) that well governed firms are more likely to issue equity than debt securities. In contrast, firms with low governance scores do not have sufficient cash for their expenditures and rely significantly on issuing debt to cover their cash shortages. The results are similar when firms are sorted by shareholder rights index (Panel D). Another interesting finding reported in this table is that the dividend policies of both types of firm are similar, suggesting that firms in our sample do not use dividends as a governance mechanism but, as new Zealand adopts an imputation tax system, dividends could be used for tax-related purposes .

[Please Insert Table 3 Here]

In Table 4, we report correlation matrices for the total corporate governance index, its sub-indices and selected control variables used in the regression model. The total index is positively correlated with its components. Board index is highly correlated with total index as

[4] Board index constitutes 47 per cent of total index.

it represents 47% of the total index[5]. The components of total index display low correlation among themselves. Thus, we are assured that the components of corporate governance that we evaluated assess the different aspects of corporate governance and do not cause serious measurement problems. Board monitoring is negatively correlated with compensation policy but positively correlated with shareholder rights. The compensation policy index is negatively correlated with shareholder rights. The signs of the correlation coefficients of the components of the total index suggest that these governance mechanisms could act as substitutes or complements (Ward *et al.,* 2009).

[Please Insert Table 4 Here]

Table 5 reports the results of the multivariate regressions (Equation 3) of corporate governance mechanisms on financing policy. Panel A shows the regression results when firms are ranked according to the values of the total corporate governance index. We find that such corporate governance mechanisms as board, compensation policy and shareholder rights are observed to have no significant effects on leverage. These results are consistent with those reported in panels A and B of Table 3 that the effects of the components of governance mechanisms on leverage may offset each other. The presence of large shareholders is negatively correlated with the level of leverage. This finding is consistent with extant literature that blockholders acting as a substitute for leverage to reduce agency problems (Mande et al., 2012). The effects of blockholders on leverage are similar when firms are ranked according to the values of board index (Panel B).

[5] Total score for Board index is 40 marks.

Panel C reports the regression results when firms are sorted according to their compensation policy index. Consistent with H_1, the compensation policy of firms with a high (low) compensation index is negatively (positively) associated with changes in leverage. These results suggest that when managerial incentives are more (less) aligned with shareholder goals, the role of leverage as a governance mechanism is less (more) necessary. Board of firms with high compensation index is negatively associated with changes in leverage suggesting that board and compensation policy are substitutes as the role of board is less necessary when incentives are more aligned. Panel D indicates that firms with strong shareholder rights are more likely to issue debt. The opposite signs observed between shareholder rights and compensation policy in Panels C and D could suggest that shareholder rights and compensation policy act as substitutes of each other. The results in Panel D also suggest that compensation policy dominates the effects of shareholder rights on firm financing policy resulting in lower changes in leverage of firms with strong shareholder rights as reported in Panel D of Table 3[6].

[Please Insert Table 5 Here]

5. Summary

Our paper examines the effects of corporate governance mechanisms on financing policy. We find that cost of capital of firms with a high corporate governance score is significantly lower than those of firms with a low governance score. We further find that firms with weak corporate governance mechanisms are more leveraged than are firms with strong governance mechanisms. After controlling for the effects among the corporate governance mechanisms,

[6] 15 observations have negative PBI, therefore we set this variable to zero. The results are similar when we deleted the observations. The results are available upon request.

we observe that firms with different levels of corporate governance quality use different corporate governance mechanisms in relation to their financing policy. We report that through their compensation policy and shareholder rights, firms can dynamically adjust their leverage as a governance mechanism. Finally, we also find evidence suggesting that compensation policy and shareholder rights are substitutes for one another.

Appendix: Components of Corporate Governance Index

Sub-Index 1: Board composition	*Maximum marks: 40 marks*
Independent	8 marks for boards with at least 66% independent directors.
	4 marks if 50% or more are independent.
	0 mark if less than 50% are independent.
Audit committee	6 marks if the committee is fully independent.
	2 if there are one or more related directors.
	0 if a member of management is on the committee.
Compensation committee	4 marks if the committee is fully independent.
	2 if there are one or more related directors.
	0 if a member of management is on the committee.
Nominating committee	3 marks if the committee is fully independent.
	2 if there are one or more related directors.
	0 if a member of management is on the committee.
	0 if there is no nominating committee.
Duality	5 marks if the jobs are split.
	2 marks if the chairman is also a related director.
	3 marks if the jobs are not split, but there is an independent lead director.
Relationship among directors	Start with 5 marks.
	Minus 3 if marks if the CEO swaps board with the CEO of another company.
	Minus 2 marks if 3 or more directors are together on the board of another public company.
	Minus 2 marks if any director who is on more than 8 other for-profit corporate boards. (score can go below zero).
CEO commitment	2 marks if the CEO sits on 3 or fewer other boards of public company.
	0 mark if more than 3.
Formal system of board performance	2 marks if any.
	0 if there is no such system.
Board meeting without management present	2 marks if yes, 0 mark if no.
	3 marks if the information is disclosed and both the board and audit

Number of board meetings	committee meets at least 4 times. 1 mark if they meet less often, or if only partial number information about the number of meeting. 0 mark if this information is not disclosed.
Sub-Index 2: Shareholding and compensation issues	*Maximum marks: 23 marks*
Directors required to own stock (stock option don't count)	4 marks if share ownership is mandatory an equals at least 3 times the annual retainer paid to directors. 2 marks if mandatory but ownership is lower. 0 mark if ownership is not mandatory.
Director own stock	Start with 4 marks. Minus 1 mark if each director has less than 1,000 shares after sitting on the board for at least a year. (Can go below zero).
CEO required to own stock (stock options don't count)	3 marks if required, or if the CEO is the controlling shareholder of the firm.
CEO own shares	3 marks if the CEO owns more than 50,000 shares after 2 years on the job. 2 marks if more than 20,000 shares. 0 mark if less than 20,000 shares.
Directors in their own separate option plan	3 marks if yes or if directors don't get stock options
Loans to directors	6 marks if there are no loans or company makes loans with interest payable. 0 mark if loans are interest free.
Sub-Index 3: Shareholder rights policy	*Maximum marks: 22 marks*
Re-election of directors	2 marks for annual election of all directors. 0 mark for staggered boards.
Stock option dilutive	8 marks if dilution is <5% of outstanding shares. 6 marks if dilution is between 5% and 10%. 0 mark if dilution is more than 10%.
Option re-priced, exercise date extended or exchanged for lower priced option	4 marks if no. 0 mark if yes.
Voting shares	8 marks if there are no non-voting or subordinate voting shares. 0 mark if voting control is 5 times greater than the ownership stake.

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Table 1

Descriptive statistics

	AVERAGE	SD	MIN	25TH	MEDIAN	75TH	MAX
Equity1	0.65	0.19	0.08	0.54	0.67	0.76	0.99
LTD1	0.16	0.14	0.00	0.02	0.14	0.25	0.59
Equity2	0.56	0.19	0.07	0.41	0.58	0.69	1.00
LTD2	0.19	0.15	0.00	0.03	0.19	0.30	0.57
Y	0.07	0.14	-1.11	0.05	0.08	0.13	0.43
Dep	0.04	0.04	-0.07	0.01	0.03	0.06	0.17
ΔS	0.12	0.35	-0.48	-0.11	0.08	0.33	2.43
ΔLTD	-0.02	0.28	-0.77	-0.22	-0.01	0.18	0.80
Div	0.05	0.06	0.00	0.02	0.04	0.07	0.44
Int	0.02	0.02	-0.05	0.01	0.02	0.03	0.10
I	0.14	0.25	-0.47	0.02	0.09	0.21	1.55

Notes: Equity1 is the market value of equity as proportions of a firm's market capital. LTD1 is the book value of long-term debt as proportions of a firm's market capital. Market capital is the sum of the market value of its common stock plus the book value of its short-term and long–term debts. Equity2 is the book value of equity as proportions of a firm's book capital. LTD2 is the book value of long-term debt as proportions of a firm's book capital. Book capital is the sum of the book value of its common equity plus the book value of its short-term and long–term debts. Y is defined as the sum of income before extraordinary items, extraordinary item, interest, income statement deferred taxes and depreciation. Dep is depreciation expenses. ΔS is the net new issues of shares which balance the cash flows. ΔLTD is the change in the book value of long-term debt. I is the change in book capital from t-t to year t, plus depreciation. Int is total interest expenses paid to creditors. Div is total dividends paid to shareholders. These variables are deflated by the beginning of year book assets. There are 319 firm-year observations from 2004 to 2008.

Table 2

Long term debt sorted according to the value of each index

Panel A	Total Index				
		Component of Market Capital		Component of Book Capital	
	N	STRONG	WEAK	STRONG	WEAK
2004	70	0.12	0.16	0.19	0.22
2005	61	0.14	0.19	0.20	0.20
2006	70	0.14	0.14	0.21	0.18
2007	63	0.13	0.19	0.16	0.23
2008	55	0.18	0.26	0.19	0.23
2004-2008	319	0.14	0.18**	0.19	0.22

Panel B	Board Composition				
		Component of Market Capital		Component of Book Capital	
	N	STRONG	WEAK	STRONG	WEAK
2004	70	0.13	0.10	0.19	0.15
2005	61	0.14	0.16	0.19	0.18
2006	70	0.14	0.13	0.20	0.16
2007	63	0.14	0.15	0.16	0.21
2008	55	0.19	0.22	0.21	0.20
2004-2008	319	0.15	0.16	0.19	0.19

Panel C	Compensation Policy				
		Component of Market Capital		Component of Book Capital	
	N	STRONG	WEAK	STRONG	WEAK
2004	70	0.11	0.17	0.17	0.22
2005	61	0.12	0.17	0.17	0.18
2006	70	0.13	0.16	0.20	0.20
2007	63	0.11	0.19	0.16	0.22
2008	55	0.14	0.31	0.18	0.28
2004-2008	319	0.13	0.19***	0.18	0.21*

Panel D	Shareholder Rights				
		Component of Market Capital		Component of Book Capital	
	N	STRONG	WEAK	STRONG	WEAK
2004	70	0.10	0.15	0.14	0.20
2005	61	0.13	0.17	0.17	0.21
2006	70	0.14	0.14	0.20	0.19
2007	63	0.12	0.20	0.16	0.24
2008	55	0.13	0.31	0.16	0.28
2004-2008	319	0.12	0.18***	0.16	0.21**

Notes: A firm's market capital is the sum of the market value of its common stock plus the book value of its short-term and long–term debts. A firm's book capital is the sum of the book value of its common equity plus the book value of its short-term and long–term debts. Firms in the top (bottom) 33% sorted based on the corresponding corporate governance index are classified as strong (weak) governed firms.

*,**,*** denote significantly different from their counterparts at 10%, 5% and 1% respectively (for two-tail tests). Significance is reported for full period only.

Table 3
Annual cash inflows and outflows as percentages of beginning of year book capital of strong and weak governance firms

Panel A Total Index

		STRONG							WEAK							
	N	Y_t	Dep_t	ΔS	ΔLTD_τ	I_t	Div_t	Int_t	COC	Y_t	Dep_t	ΔS	ΔLTD_τ	I_t	Div_t	Int_t	COC
2004	70	0.05	0.04	0.17	-0.04	0.15	0.05	0.02	0.20	0.01	0.04	0.13	0.01	0.13	0.04	0.03	0.24
2005	61	0.11	0.04	0.10	0.00	0.17	0.06	0.02	0.48	0.01	0.03	0.11	0.03	0.13	0.04	0.02	0.10
2006	70	0.07	0.04	0.08	0.04	0.16	0.05	0.02	0.33	0.05	0.04	0.17	-0.02	0.17	0.05	0.03	0.35
2007	63	0.09	0.04	0.05	-0.03	0.07	0.05	0.02	0.06	0.07	0.03	0.17	0.00	0.20	0.05	0.03	0.73
2008	55	0.03	0.04	0.10	-0.05	0.05	0.04	0.03	-0.07	0.09	0.02	0.07	0.03	0.14	0.04	0.03	0.07
2004-2008	319	0.07	0.04	0.10	-0.01	0.12	0.05	0.02	0.18	0.05	0.04	0.12	0.02	0.16	0.04	0.03*	0.31**

Panel B Board Composition

		STRONG							WEAK							
	N	Y_t	Dep_t	ΔS	ΔLTD_τ	I_t	Div_t	Int_t	COC	Y_t	Dep_t	ΔS	ΔLTD_τ	I_t	Div_t	Int_t	COC
2004	70	0.08	0.04	0.14	-0.03	0.17	0.05	0.02	0.17	0.06	0.05	0.16	-0.11	0.1	0.05	0.02	0.3
2005	61	0.11	0.04	0.05	0.03	0.14	0.07	0.02	0.36	0.05	0.04	0.16	-0.01	0.16	0.05	0.02	0.18
2006	70	0.07	0.04	0.07	0.03	0.14	0.05	0.02	0.33	0.08	0.05	0.22	-0.06	0.2	0.06	0.03	0.33
2007	63	0.08	0.03	0.04	-0.01	0.08	0.05	0.02	0.09	0.08	0.03	0.15	-0.02	0.16	0.06	0.02	0.69
2008	55	0.05	0.04	0.05	0.01	0.06	0.06	0.02	-0.06	0.1	0.03	0.12	-0.02	0.15	0.04	0.03	0.05
2004-2008	319	0.07	0.04	0.08	0.00	0.12	0.05	0.02	0.14	0.07	0.04	0.15	-0.02	0.16	0.06	0.03*	0.31

Panel C Compensation Policy

		STRONG							WEAK							
	N	Y_t	Dep_t	ΔS	ΔLTD_τ	I_t	Div_t	Int_t	COC	Y_t	Dep_t	ΔS	ΔLTD_τ	I_t	Div_t	Int_t	COC
2004	70	0.04	0.05	0.16	-0.1	0.08	0.05	0.01	0.3	0.08	0.03	-0.01	0.08	0.1	0.06	0.02	0.24
2005	61	0.1	0.06	0.14	-0.09	0.14	0.06	0.02	0.39	0.06	0.03	0.07	0.04	0.14	0.05	0.02	0.12
2006	70	0.07	0.04	0.16	-0.11	0.1	0.04	0.03	0.31	0.06	0.03	0.09	0.07	0.18	0.04	0.02	0.25
2007	63	0.07	0.04	0.2	-0.14	0.1	0.05	0.02	0.08	0.06	0.03	0.06	0.04	0.13	0.04	0.02	0.71
2008	55	0.09	0.04	0.18	-0.09	0.13	0.04	0.03	-0.01	0.07	0.03	-0.03	0.13	0.13	0.05	0.02	-0.09
2004-2008	319	0.07	0.05***	0.17***	-0.09	0.13	0.05	0.02	0.24	0.06	0.03	0.05	0.06***	0.14	0.05	0.02	0.25

Table 3 (continued)
Annual cash inflows and outflows as percentages of beginning of year book capital of strong and weak governance firms

Panel D Shareholder Rights

		STRONG								WEAK							
	N	Y_t	Dep_t	ΔS	ΔLTD_τ	I_t	Div_t	Int_t	COC	Y_t	Dep_t	ΔS	ΔLTD_τ	I_t	Div_t	Int_t	COC
2004	70	0.07	0.05	0.17	-0.11	0.11	0.05	0.01	0.27	-0.01	0.04	0.13	0.03	0.11	0.05	0.02	0.18
2005	61	0.11	0.06	0.12	-0.06	0.14	0.06	0.02	0.4	0.06	0.04	0.07	0	0.1	0.05	0.02	0.17
2006	70	0.07	0.05	0.18	-0.08	0.16	0.03	0.03	0.32	0.08	0.04	0.16	-0.04	0.17	0.05	0.02	0.3
2007	63	0.07	0.04	0.11	-0.13	0.03	0.05	0.02	0.05	0.05	0.03	0.11	0.05	0.18	0.04	0.02	0.77
2008	55	0.09	0.04	0.14	-0.08	0.12	0.04	0.03	0.09	0.07	0.02	0	0.12	0.14	0.05	0.02	-0.08
2004-2008	319	0.08**	0.05**	0.15	-0.1	0.11	0.05	0.02	0.24	0.04	0.03	0.12	0.02***	0.14	0.05	0.02	0.3

Notes: Y_t is defined as the sum of income before extraordinary items, extraordinary item, interest, income statement deferred taxes and depreciation. Dep_t is depreciation expenses. ΔS_t is the net new issues of shares which balance the cash flows. ΔLTD_t is the change in the book value of long-term debt. I_t is the change in book capital from t-1 to year t, plus depreciation. Int_t is total interest expenses paid to creditors. Div_t is total dividends paid to shareholders. COC is cost of capital. Firms in the top (bottom) 33% sorted based on the corresponding corporate governance index are classified as strong (weak) governed firms.

*,**,*** denote significantly different from their counterparts at 10%, 5% and 1% respectively (for two-tail tests assuming unequal variance).

Significance is reported for full period only.

Table 4

Correlations among variables

	ΔLTD	Total Index	BOARD	COMP	RIGHTS	BLOCK	IE	PBI	TTURN
Total Index	-0.01								
BOARD	0.10	0.90							
COMP	-0.27	0.35	-0.07						
RIGHTS	0.05	0.29	0.17	-0.04					
BLOCK	-0.07	-0.02	0.00	-0.02	-0.06				
IE	0.18	0.05	0.08	-0.10	0.09	-0.01			
PBI	0.14	0.08	0.08	0.01	0.04	0.02	0.08		
TTURN	-0.33	0.11	-0.01	0.36	-0.16	-0.03	-0.08	0.16	
TA	0.30	0.07	0.22	-0.31	-0.03	0.19	0.15	0.27	-0.21

Notes:ΔLTD is change in long term debt. BOARD is board composition sub-index. COMP is compensation policy sub-index. RIGHTS is shareholder rights sub-index. Total index is the sum of all three sub-indices. BLOCK is the cumulative percentage of shares held by shareholders holding at least 5% of ordinary shares in the firm. TA, IE, PBI and TTURN are natural logarithms of total assets, interest expenses, profit before interest and total sales, respectively. All these variables except ΔLTD are measured at t-1.

Table 5

The association between corporate governance mechanisms and financing policy sorted based on total corporate governance index and its sub-indices

Panel A	Total Index	Panel B	Board Composition
Dboard x Board_High	0.00	Dboard x Board_High	0.00
Dcomp x Comp_High	-0.01	Dcomp x Comp_High	-0.01
Drights x Rights_High	0.02	Drights x Rights_High	0.01
Dboard x Board_Low	0.01	Dboard x Board_Low	0.01
Dcomp x Comp_Low	0.00	Dcomp x Comp_Low	0.01
Drights x Rights_Low	-0.01	Drights x Rights_Low	-0.01
BLOCK	-0.17**	BLOCK	-0.18***
IE	0.02***	IE	0.02***
PBI	0.00	PBI	0.00
TTURN	-0.01	TTURN	-0.01
TA	0.03**	TA	0.03**
Intercept	-0.31	Intercept	-0.33
Year effects	Yes	Year effects	Yes
Industry effects	Yes	Industry effects	Yes
Adj. R^2	28.35%	Adj. R^2	28.08%
Panel C	**Compensation Policy**	**Panel D**	**Shareholder Rights**
Dboard x Board_High	-0.01**	Dboard x Board_High	0.00
Dcomp x Comp_High	-0.11***	Dcomp x Comp_High	-0.08***
Drights x Rights_High	0.10***	Drights x Rights_High	0.08***
Dboard x Board_Low	0.00	Dboard x Board_Low	0.00
Dcomp x Comp_Low	0.06***	Dcomp x Comp_Low	0.00
Drights x Rights_Low	-0.03***	Drights x Rights_Low	0.00
BLOCK	-0.20***	BLOCK	-0.21***
IE	0.02***	IE	0.01**
PBI	0.00	PBI	0.00
TTURN	0.02	TTURN	0.00
TA	0.03**	TA	0.03**
Intercept	-0.59**	Intercept	-0.40
Year effects	Yes	Year effects	Yes
Industry effects	Yes	Industry effects	Yes
Adj. R^2	42.80%	Adj. R^2	34.97%

The dependent variable is change in long term debt. DBOARD_Low is a dummy of 1 for firms in the bottom 33% when sorted according to the values of each index and 0 otherwise, DBOARD_High is a dummy of 1 for firms in the top 33% when sorted according to the values of each index and 0 otherwise, BOARD is Board Index, DCOMP_Low is a dummy of 1 for firms in the bottom 33% when sorted according to the values of each index and 0 otherwise, DCOMP_High is a dummy of 1 for firms in the top 33% when sorted according to the values of each index and 0 otherwise, COMP is Compensation Policy Index, DRIGHTS_Low is a dummy of 1 for firms in the bottom 33% when sorted according to the values of each index and 0 otherwise, DRIGHTS_High is a dummy of 1 for firms in the top 33% when sorted according to the values of each index and 0 otherwise, RIGHTS is Shareholder Rights Index. IE, PBI, TTURN and TA respectively are the natural logarithms of Interest Expenses, Profit before Interest, Total Turnover and Total Assets. *, **, *** are significance at 10%, 5% and 1% respectively.