External Governance and Ownership Structure

Liang Ding, College of Business Administration, Kent State University, USA
Aiwu Zhao, Department of Management and Business, Skidmore College, USA

ABSTRACT

External governance (e.g., takeover) and internal governance (e.g., ownership structure) are the most common mechanisms to solve the agency problem in a corporation. Cremers and Nair (2005) make the first effort to investigate one of the interactions between the two mechanisms by considering G-index and block shareholder ownership. This paper investigates the interaction between G-index and executive ownership. Our tests show that the interaction of two mechanisms generally has negative impact on the firm performance and value. When checking the abnormal returns of portfolios formed by the different combinations of the two mechanism characters, we find both substitution and complementary relation between G-index and executive ownership.

INTRODUCATION

The separation of ownership and management allows modern corporations to take full advantage of labor specialization and the scale of economy, while the major side effect is agency problem. This separation induces conflict of interest between managers and shareholders, since shareholders are interested in maximizing the value of firm, while managers' interest is more likely to focus on their own compensation and job security.

Shareholders, managers, and scholars have all been searching for mechanisms to solve the conflict. A number of corporate governance mechanisms, such as ownership structure, executive compensation, board structure, and governance regulatory, have been widely discussed and implemented. However, until now, there has been no perfect all-in-one solution for the agency problem.

Based on the corporation charter provisions, Gompers et al. (2003) (GIM) construct a "Governance Index" to proxy for the level of shareholder rights. Gremers and Nair (2005) treat the "G-index" as a proxy for external governance, since the index is strongly related to the level of takeover vulnerability.

From the game theory perspective, the outcome of a game is not only associated with the playing rules of the game but also associated with the characteristics of players. During the game, constrained by the playing rules, the negotiating power of each player will influence the result. Since there are a number of players in a corporation, e.g., CEO, corporate insiders, outsider directors, external block shareholder, controlling stockholders, and others, we shall be interested in researching the interaction between G-index and those players. In this paper, we check the interaction between G-index and executive ownership. We find the portfolio with the low G-index and low executive ownership firms bears the highest abnormal return, and the one with high G-index and low executive ownership bears the lowest abnormal return.

GIM (2003) call low G-index portfolio "democracy portfolio" and high G-index portfolio "dictator portfolio". Following their line, we interpret that the portfolio with low G-index and low executive ownership firms is the democracy portfolio with democratic leaders.

The rest of this paper is organized as follows. Section 2 reviews the related literature. Section 3 shows the description of the data. Section 4 illustrates the empirical tests and results. Section 5 concludes the paper.

LITERATURE REVIEW

Corporate governance can be regarded as a problem involving an agent (CEO or senior executives) and multiple principals (the shareholders, creditors, employees, and other parties with whom the CEO engaged in business on behalf

of the corporation). The center of the agency problem is the conflict of interests between managers and shareholders. A number of governance mechanisms related to corporate world are targeted at aligning the interest of managers with those of shareholders.

As a general assumption, managers and shareholders are risk averse and their behavior is rational. Therefore, in the game between shareholders and managers, the most common approaches used by shareholders include supervision, threats, and incentives. In general, the governance mechanism could be classified into two groups: external governance and internal governance.

For external governance, takeover is regarded as an important mechanism to threaten managers and to improve the firm's value. As argued by Becht et al. (2003), one of the most radical and costly mechanisms for disciplining and replacing managers is a hostile takeover. The successful takeover would allow bidder to appoint a new CEO. Therefore, the takeover is a great threaten to push the manager to improve efficiency. Much research has been devoted to the takeover mechanism. Scharfstein (1988) focuses on asymmetric information between shareholders and management as a source of contract inefficiency. He finds that a raider who is informed about the firm's environment can mitigate this inefficiency. The takeover mechanism provides a means of penalizing the manager precisely when he should be penalized — when firm value is low because the manager shirked responsibilities and not because the environment was unfavorable.

GIM (2003) establish "Governance index" to proxy for the level of shareholder right based on the modern anti-takeover or delaying takeover measure by tracking 24 charter provisions. They posit that these provisions would low the effectiveness of takeover threats, therefore resulting in low profit and low return.

A research done by Comment and Schwert (1995) argue that the deterrence of modern anti-takeover measures is limited, and only increases takeover premiums. The evolution of sophisticated anti-takeover measures made the level of takeover activities fell dramatically after 1980s. However, since the current anti-takeover mechanisms involve many provisions related to compensation, voting right, and delay in board meeting, Comment and Schwert's argument is very hard to hold now.

Moreover, besides takeover mechanism, the competition in product market, management market competition, audit supervision and law protection are all regarded as alternatives of external governance.

For internal governance, the ownership structure, board structure, and executive incentive are the major components. In fact, leverage and dividend can also be regarded as internal governance mechanisms.

Shleifer and Vishny (1986) model that large shareholders have incentives to monitor the management and, consequently, the presence of large shareholders can be crucial to facilitate takeover. Larger shareholders have incentive to monitor the management and get paid for part of the gains that occur through takeover, thus the presence of large shareholders makes the appearance of a bidder more likely. Cremers and Nair's (2005) result is consistent with Shleifer and Vishny's model, in that the higher public pension fund holding can be a source to lower agency costs.

Although the benefit of large investors is at least theoretically clear, Shleifer and Visheny (1997) also argue in another paper that the costs of large investors are obvious. Large investors are active players in a corporation, but they may only represent their own interests, which as argued by Shleifer and Vishny, "need not coincide with the interests of other investors in the firm, or with the interests of employees and managers." Large investors might try to treat themselves preferentially at the expense of other investors and employees. In addition, if their control rights are significantly in excess of their cash flow rights, they do have greater ability to do so.

Demsetz and Villalonga (2001) find evidence that ownership structure and corporate performance is not statistically significant related. This implies the tradeoff between the benefit and the cost of large shareholders.

Since there are both benefits and costs of large shareholders, if we can not distinguish the specific status of the large shareholders, the impact of large shareholders under various scenarios is subject to empirical tests.

Cremers and Nair (2005) make the first attempt to investigate how the market for corporate control (external governance) and shareholder activism (internal governance) interact. They analyze one of interactions between external governance and internal governance: the interaction of G-index and block shareholders. They find a portfolio with low G-index and high block shareholder bears highest abnormal return, while a portfolio with low G-index and low block shareholder bears the lowest abnormal return.

Cremers and Nair's research opens a new perspective of study, that is, to investigate the other interactions of external and internal governance. Following this line, this paper investigates the interaction of external governance (G-index) and one of the internal governance mechanisms, managerial ownership.

Insider ownership, mainly ownership of CEOs, senior executive officers, is related to operating performance and equity values in a manner consistent with curvilinear relationship tested by Morck et al. (1988) and Stulz (1988). Stulz (1988) suggested that increased insider holding enhances firm value at low levels of ownership. However, at higher levels of insider ownership, managerial entrenchment impedes takeovers and decreases firm value. Morck et al. (1988) present evidence on a nonmontonic relationship between cash flow ownership of mangers and profitability of firms.

When manager's ownership increases, their interest is better aligned with those of other shareholders. However, large management shareholders also increase their bargaining power, which, in turn, cause management to pursue self-interest at the expense of other shareholders.

It is more realistic to investigate the impact of external governance mechanism (e.g., takeover vulnerability) on firm value conditioning the managerial ownership. In large managerial owned forms, the CEO will face much fewer takeover threats even if the external governance mechanism is high (low G-index). Meanwhile, under high takeover vulnerability (low G-index), the managers in low managerial owned firms will face higher takeover pressure.

DATA

The initial sample set consists of all firms that have a G-index, and the sample set is provided by GIM. GIM construct the G-index based on the Investor Responsibility Research Center (IRRC) surveys (1990, 1993, 1995, 1998, 2000, 2002, 2004, and 2006) of investor's right and takeover protection. They identify 24 anti-takeover provisions, and each provision counts one point in the G-index[1]. Using GIM's terminology, we refer to the companies with the strongest shareholder rights ($G \leq 5$) as the "Democracy" companies, and refer the companies with the weakest shareholder rights ($G \geq 14$) as the "Dictatorship" companies. Since the IRRC surveys are not issued every year, we follow GIM's method and use the years of IRRC data to classify multiple years. The initial set includes 4017 firms, with dates ranging from 1990 to 2006.

For the tests of operating performance and abnormal return, we require that sample firms have accounting data, stock return data and executive ownership data. We match the G-index to stock return data from the CRSP, the accounting data from Compustat, and the executive ownership data from Excucomp. Firms missing accounting data, stock return data, and executive ownership data will be deleted from the sample set.

We use operating ROA as the measure of operating performance. There are several ways to measure ROA. Barber and Lyon (1996) advocate operating income before depreciation; however, Core, Guay, and Rusticus (2006) prefer the use of operating income after deprecation. We report the result for operation income before depreciation (ROA(1)). The results from using operating income after deprecation are almost the same. We also measure ROA(2) as the ratio of earning before interest and tax to total asset, following Cheng (2008) and some other researchers who use it as the definition of ROA.

For firm value, instead of using Tobin's Q, we follow Nam, Tang, Thornton, and Wynne (2006) approach to use market-to-book ratio. The market-to-book ratio is defined as the total market value of assets to the book value of asset for the firm. The market value of assets is defined as the sum of the market value of equity plus the book value of liabilities and preferred stock. This measure is regarded as a close proxy for Tobin's Q.

We also include book-to-market ratio and firm size, measured as the logarithm of book-to-market ratio and the market value of equity, as control variables. The ratio of capital expenditure to total sales and the leverage ratio are also included in the tests.

Table 1 presents summary statistics for corporate performance and value, G-index, executive ownership, and other firm characteristics. The results indicate that G-index ranges between 1 and 18, with a mean and median of 9. The mean of executive ownership is 6.5% and the median is 1.85%.

[1] See GIM (2003) for detail.

Table 1: Summary statistics of G and firm characteristics

Variables	Mean	Std. dev	Min	25th pctl	Median	75th pctl	Max
MVE	2980.18	13151.3	4.31376	419.6757	951.2175	2227.71	420992.4
BME %	0.628517	1.688457	-31.3559	0.300298	0.477986	0.718482	78.73543
Executive ownership %	6.537602	10.67567	0	0.6	1.85	7.64	100
G-index	8.795202	2.600245	1	7	9	10	18
Market to Book ratio %	1.978044	1.378362	0.284713	1.206178	1.582924	2.237548	24.51239
Capital expenditures to sales %	0.074828	0.178004	0	0.021359	0.039033	0.073839	8.85969
Leverage ratio %	0.204164	0.185648	0	0.029072	0.184998	0.321488	2.015673
Operating income before deprecation to total asset %	0.143158	0.111701	-1.47507	0.093213	0.114024	0.196516	0.917518
EBIT to total asset %	0.096731	0.113298	-1.57523	0.055349	0.097232	0.146797	0.865322

TESTS

A. The interaction of external and internal governance mechanism on operating performance and firm value

Using a similar approach as Core et al. (2006) to assess the effect of governance mechanism on firm performance, we regress measure of future operating performance (industry adjusted ROA) and firm value (M/B ratio) (measured at time t) on G-index and executive ownership , and control variables (measured at time t-1). Since the main interest for this test is to find the interaction between two governances, we add the interaction term in the model. The model for the test is:

$$Industry-adjusted-ROA_{it} =$$

$$\alpha+\beta_1 \log MVE_{i,t-1}+\beta_2 \log BME_{i,t-1}+\beta_3 \log Gindex_{i,t-1}+\beta_4 Execu_{i,t-1}+\beta_5(\log Gindex_{i,t-1} * Execu_{i,t-1})$$

We use Core et al. (2006) model, except for changing G-index to log(G-index) to control heteroscedasticity. Different from Core's result that G-index is negative significant to ROA, we find that the coefficient of log(G-index) is not significant. However, the coefficient of G-index for M/B regression is negative significant. This result is consistent with GIM (2003) that G-index is negative related to firm value.

After we add executive ownership and the interaction term of G-index and executive ownership in the models (see table 2), the coefficients of G-index and executive ownership are not significant, but in general, they have negative signs. The interaction term is positive significant. This is the evidence to show the complementary relation between G-index and executive ownership.

Table 2: External and internal governance on the firm performance and value

$$Industry - adjusted - ROA_{it} =$$

$$\alpha + \beta_1 \log MVE_{i,t-1} + \beta_2 \log BME_{i,t-1} + \beta_3 \log Gindex_{i,t-1} + \beta_4 Execu_{i,t-1} + \beta_5 (\log Gindex_{i,t-1} * Execu_{i,t-1})$$

	ROA1	ROA2	M/B	ROA1	ROA2	M/B	ROA1	ROA2	M/B
C	-0.0802	-0.10647	-0.88583	-0.08126	-0.10784	-0.798	-0.0764	-0.0975	-0.80324
	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]
LogMVE	0.0108	0.01221	0.10308	0.01125	0.01268	0.1055	0.0116	0.0132	0.10252
	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]
LogBME	-0.0194	-0.01978	-0.65411	-0.01938	-0.01969	-0.6537	-0.0184	-0.0187	-0.63299
	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]	[<.0001***]
LogGindex	-0.00067	0.00687	-0.15148	-0.00307	0.00392	-0.2097	-0.0011	0.0048	-0.10533
	[0.8687]	[0.0865*]	[0.0009***]	[0.5386]	[0.4254]	[0.0002***]	[0.8166]	[0.331]	[0.0615*]
Execu				-0.0002	-0.0002	-0.0076	-0.0002	-0.0002	-0.00548
				[0.5745]	[0.4887]	[0.1003]	[0.6262]	[0.47]	[0.2317]
Interaction				0.00008	0.0001	0.00125	0.00007	0.00009	0.0007
				[0.0853*]	[0.03**]	[0.0273**]	[0.1472]	[0.0554*]	[0.1733]
Cap							-0.0495	-0.0872	0.64475
							[<.0001***]	[<.0001***]	[<.0001***]
Leverage							-0.0339	-0.0409	-1.07448
							[<.0001***]	[<.0001***]	[<.0001***]
Sample size	4650	4667	4668	4650	4667	4668	4595	4611	4612
R^2	0.0769	0.089	0.2665	0.0803	0.0945	0.2677	0.0898	0.1189	0.2917

Notes: Significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

Following Cremers and Nair (2005) and GIM (2003) argument, we further control the capital expenditure ratio and leverage. Although the coefficient of interaction term is not significant after adding two more control variables, it still shows the complimentary relation between two mechanisms.

B. The interaction on stock return

We then investigate the equity return for four portfolios created by sorting stock according to the external and internal governance proxy. As Cremers and Nair (2005) and GIM (2003) do in their tests, we use Fama-French three factor model plus the momentum factors to control the difference in return driven by difference in riskness or "style" of the portfolio.

$$R_t = \alpha + \beta_1 * RMRF_t + \beta_2 * SMB_t + \beta_3 * HML_t + \beta_4 * Momentum_t + \varepsilon_t$$

where R_t is the excess return in month t, and $RMRF_t$, SMB_t, HML_t, and momentum are the returns on the market portfolio and the three portfolios that capture the size, B/M, and momentum effects. The intercept is treated as the abnormal return. We construct the four portfolios as follows:

	G-index ≤ 5 (Democratic)	G-index ≥ 14 (Dictatorship)
Executive ownership ≤ 0.6	LL	HL
Executive ownership ≥ 7.68	LH	HH

Table 3 reports the result of the regressions. We find that a portfolio that buys firms with low G-index and low executive ownership (LL) and sells firms with high G-index and low executive ownership (HL) generates 1.8% monthly abnormal return, the annualized abnormal return of 23%.

Table 3: Monthly abnormal returns

High G-index and High Executive ownership					
	Intercept	RMRF	SMB	HML	Mom
coefficient	0.00235	0.00946	0.00198	0.00282	-0.00046
p-value	0.5523	<.0001	0.1036	0.0214	0.66
High G-index and Low Executive ownership					
	Intercept	RMRF	SMB	HML	Mom
coefficient	-0.00521	0.00912	0.00594	0.00996	0.00325
p-value	0.1959	<.0001	<.0001	<.0001	0.0024
Low G-index and High Executive ownership					
	Intercept	RMRF	SMB	HML	Mom
coefficient	0.00701	0.01338	0.00358	0.00408	0.00027
p-value	0.1782	<.0001	0.0236	0.0138	0.8492
Low G-index and Low Executive ownership					
	Intercept	RMRF	SMB	HML	Mom
coefficient	0.0131	0.0098	0.01095	0.00197	-0.0043
p-value	0.0016	<.0001	<.0001	0.1357	0.0002

When executive ownership is high, the portfolio that buys dictatorship and sells democratic firms generates almost the same amount abnormal return with the portfolio that buys democratic and dictatorship firms when the executive ownership is low. This finding is consistent with Morck et al. (1988) that when manager's ownership increases to a certain level, his/her interests are better aligned with those of shareholders. In addition, when executive ownership is low, high external pressure is needed to supervise mangers. Therefore, this shows the substitution effect of two measures.

However, when executive ownership is high, the abnormal return of the portfolio is always lower than that of the portfolio with low executive ownership, no matter what the level of external governance is. These results are consistent with Stulz's (1988) model that higher level of insider ownership decrease firm value.

When the G-index is controlled, the portfolio that buys low executive ownership firms and sells high executive ownership firms always bears a higher abnormal return. This shows the complementary effect of internal governance mechanism to the external governance mechanism.

CONCLUSION

External governance (e.g., takeover) and internal governance (e.g., ownership structure) are the most common mechanisms to solve the agency problem in a corporation. Much research has been done to investigate the effect of each mechanism to the corporate performance and firm value. Since managers and shareholders are facing the two mechanisms at the same time, the interaction between the mechanisms should also be considered when either stakeholder wants to make decision.

Cremers and Nair (2005) make the first effort to investigate one of the interactions between the two mechanisms by considering G-index and block shareholder ownership. They find the complementary relationship between G-index and block shareholder ownership.

We investigate the interaction between G-index and executive ownership. G-index has negative effect on firm performance. The effect of executive ownership is mixed according to some researchers. Stulz argues that at low level of executive ownership, the increase of CEO ownership will increase firm performance; while at high level, the increase of CEO ownership will decrease firm performance. Our tests show that the interaction of two mechanisms generally has negative impact on the firm performance and value. When checking the abnormal return of the portfolios formed by the various combination of the two mechanism characters, we find both substitution and complementary relation between G-index and executive ownership.

Beyond the interaction discussed in the paper, the interactions between the external governance mechanism (such as takeover, legal protection, and auditing) and the internal governance mechanism (ownership structure, compensation, and board structure) are still in need of further investigation. Future research could investigate the most significant interactions between those mechanisms.

REFERENCES

Becht, Marco, Patrick Bolton, and Ailsa Roell, (2003). Corporate governance and control. *Handbook of the Economics of Finance*. Elsevier.

Barber, Brad, and John Lyon, (1996). Detecting long-term abnormal operating performance: the empirical power and specification of test statistics. *Journal of Financial Economics*, 41.

Cheng, Shijun, (2008). Board size and the variability of corporate performance. *Journal of Finance Economics*, 87.

Comment, Rober, and William Schwert, (1995). Poison or placebo? Evidence on the deterrence and wealth effects of modern antitakeover measures. *Journal of Financial Economics*, 39.

Core, John, Wanye Guay, and Tjomme Rusticus, (2006). Does Weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations. *Journal of Finance*, Vol LXI, No.2.

Cremers, Martijn and Vinary Nair, (2005). Governance mechanism and equity prices. *Journal of Finance*, Vol LX, No. 6.

Demsertz, Harold, and Belen Villalonga, (2001). Ownership structure and corporate performance. *Journal of Corporate Finance*, 7.

Gomper, Paul, Joy Ishii, and Andrew Metrick, (2003). Corporate governance and equity prices. *The Quarterly Journal of Economics*, February 2003.

Mikkelson, Wayne, and Megan Partch, (1997). The decline of takeovers and disciplinary managerial turnover. *Financial Economics*, 44.

Morck, Randall, Andrei Shleifer, and Robert Vishny, (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20.

Nam, Jouahn, Charles Tang, John Thornton, and Kevin Wynne, (2006). The effect of agency costs on the value of single-segment and multi-segment firms. *Journal of Corporate Finance*, 12.

Scharfstein, David, (1988). The disciplinary role of takeovers. *The Review of Economic Studies*, Vol. 55, No,2.

Shleifer, Andrei, and Robert Vishny, (1986). Large Shareholders and Corporate Control. *Journal of Political Economy*, Vol. 94(3).

Shleifer, Andrei, and Robert Vishny, (1997). A Survey of Corporate Governance. *Journal of Finance*, Vol. 52(2).

Stulz, Rene, (1988). Managerial Control of Voting Rights: Financing Policies and the Market for Corporate Control. *Journal of Financial Economics*, Vol. 20.