

The Discriminative Effect of Ownership Structure on Stock Returns in Taiwan during Bear Markets

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ABSTRACT

A number of papers have found evidences that better corporate governance leads to better operating performance or firm value. But the relation between corporate governance and stock prices or returns is not concluded yet. Previous consensus regarding stock returns is that the returns are unpredictable and prices are characterized by a random walk. But the earlier consensus has been replaced by a view that returns are predictable, particularly at longer time horizons. Under consideration of control variables or conditions, some literature finds that ownership structure has a powerful effect on stock prices or returns. The interest of this paper is to investigate the discriminative effect of ownership structure on stock returns in Taiwan during bull and bear periods. The results suggest that the discriminative effect of ownership structure on stock returns not only depends on control rights but also on market status. The hypothesis is supported that the discriminative effect exists during bear periods.

Keywords: *Discriminative Effect, Ownership Structure, Control Rights*

INTRODUCTION

Corporate governance is a set of mechanisms to prevent management and controlling shareholders from engaging in expropriation of minority shareholders. According to Shleifer and Vishny (1997), corporate governance deals with how the financial suppliers assure the corporate will pay them reasonable return of their investment. It implies that operating performance, firm value, and stock return are crucial to shareholders.

Most related literature particularly focuses on the relationships among corporate governance, operating performance, and firm value; but few papers study the relation between corporate governance and stock prices or returns. Corporate governance is referred to behaviors, mechanisms or a comprehensive index of corporate governance. Ordinarily, ROA (Return on Assets) and ROE (Return on Equity) are proxies for operating performance, and Tobin's Q or equity market value is for firm value. A number of papers have found evidences that better corporate governance leads to better operating performance or firm value, the discussed constructs such as those of ownership structure (Morck, Shleifer, and Vishny, 1988; McConnell and Servaes, 1990; Shleifer and Vishny, 1997; Cho, 1998; La Porta and Lopez-de-Silance, and Shleifer, 1999; Himmelberg, Hubbard, and Palia, 1999; Demsetz and Villalonga, 2001; Core and Larcker, 2002; Claessens, Djankov, Fan, and Lang, 2002; Balatbat, Taylor, and Walter, 2004), board composition (Millstein and MacAvoy, 1998; Wagner, Stimpert, and Fubara, 1998; Rhoades, Rechner, and Sundaramurthy, 2000), information disclosure (Lang and Lundholm, 1993), investor protection or legal environment (La Porta et al., 2002; Klapper and Love, 2004; Durnev and Kim, 2005), and corporate governance rating (Black, 2001; Gompers and Ishii, and Metrick, 2003).

On the contrary, the relation between corporate governance and stock prices or returns is not concluded yet. The previous consensus regarding stock returns is that the returns are unpredictable and prices are characterized by a random walk. But the earlier consensus has been replaced by a view that returns are predictable, particularly at longer horizons (Kandel and Stambaugh, 1996; Brandt, 1999; Barberis, 2000; Campbell and Viceira, 2001). Under consideration of control variables or conditions, some literature finds that corporate governance behavior has a powerful effect on stock prices or returns. In those papers, control variables or conditions include takeover/anti-takeover (Sundaramurthy et al., 1997), shareholder rights (Gompers et al., 2003), internal/external control (Cremers and Nair, 2005), and financial crisis (Johnson, Boone, and Breach, 2000; Lemmon and Lins, 2003). Bauer et al. (2003) and Core et al. (2006) argue that there is no support for weak governance causing poor stock returns. Reviewing the previous related literature that includes many variables or conditions, the effect of corporate governance on stock returns during bull and bear periods has seldom been discussed. This paper calls the effect as discriminative effect that means the ability of corporate governance to distinguish the performance of stocks. Some literature suggests that corporate governance, investment opportunities, and firm value may all be jointly determined (Cho, 1998; Himmelberg et al., 1999; Demsetz and Villalonga, 2001; Core and Larcker, 2002; Lemmon and Lins, 2003). It might be the same case that corporate governance, investment opportunities, and stock returns are also jointly correlated. The sample from bull and bear periods could be used as a proxy for investment opportunities. Besides, some papers find that the direction of the market is important in determining momentum profits or stock returns, with continuation returns appearing stronger following

bear markets (Waksman, Sandler, Ward, and Firer, 1997; Griffin and Martin, 2003; Siganos and Chelley-Steeley, 2005). These findings are crucial to investors, since traders can gain significant abnormal returns following bear markets.

Among the constructs of corporate governance, ownership structure is the most important one. Theory suggests that both cash flow rights and voting rights are crucial. The incentives to expropriate vary with cash flow rights (Jensen and Meckling, 1976). The interest of this paper is to examine the discriminative effect of ownership structure on stock returns, i.e. whether differences in corporate governance can explain differences in stock returns during bull or bear periods. The main hypothesis is that, during bear periods, the discriminative effect of corporate governance on stock returns exists, but it is not the case for bull periods since shareholders might gain abnormal returns during bull periods no matter how the mechanisms of corporate governance are. During bear periods, with less investment opportunities, controlling shareholders have more incentives to expropriate outside investors.

The rest of the paper is organized as follows. Section II discusses related literature and describes the corporate governance environment of Taiwan. Section III describes the sample and the hypotheses. Section IV presents the results of the empirical analysis. Section V concludes with a brief summary.

OWNERSHIP STRUCTURE AND CORPORATE GOVERNANCE

Many papers suggest that the firm's ownership structure is a primary determinant of the extent of agency problems between controlling insiders and outside investors. Morck et al. (1988) suggest that the convergence-of interest effect is dominant at both low levels and high levels of managerial ownership, but the entrenchment effect is dominant at medium levels of managerial ownership. Shleifer and Vishny (1997) point out "Large shareholders thus address the agency problem in that they have both a general interest in profit maximization, and enough control over the assets of the firm to have their interest respected". La Porta et al. (1999) argue that when large shareholders effectively control corporations, they might try to expropriate wealth by seeking personal benefits at the expense of minority shareholders. The paper is the first study that investigates the issue of ultimate control. The findings suggest that ownership and control can be separated to the benefit of the large shareholders. Both cash flow rights and voting rights are critical to corporate governance of a firm. Since incentives to expropriate vary with cash flow rights, controlling shareholders and managers with less than full ownership of the cash flow rights of the firms who control corporate assets can potentially expropriate outside investors.

According to La Porta et al. (1999), Claessens et al. (2000) and Lins (2003), control is enhanced through pyramid structures and cross-holdings among firms in all East Asian countries, i.e., voting rights frequently exceed cash flow rights via pyramid structures and cross-holdings. The separation of ownership and control in particular is usually associated with family ownership. A controlling family is able to elect board directors and appoint management (Claessens et al., 2000). Similarly, Taiwanese listed companies are typical of family-controlled companies that are generally owned and managed through blood and marriage ties (Yeh, Lee, and Woitke, 2001).

Through pyramid structures and cross-holdings, the controlling family enhances its control on the listed company. The direct control rights come from the shares directly owned by the family group, and the indirect control rights are given via pyramid structures and cross-holdings among firms controlled by the family group. Some corporate entities owning shares of a listed company are either affiliated companies or nominal investment companies associated with the controlling family. The controlling shareholders enhancing their control rights through pyramid structures and cross-holdings in Taiwan is prevalent with a fact that the separation of control rights and cash flow rights averages 5.13% during the period of 2001-05. In terms of ratio, the mean ratio of the control group's control rights to its cash flow rights is greater than 4.

Strong evidences have been found that separation of ownership and control is negatively associated with firm value and operating performance. But the relation between corporate governance and stock prices or returns is not concluded yet. The previous consensus regarding stock returns is that the returns are unpredictable and prices are characterized by a random walk. But the earlier consensus has been replaced by a view that returns are predictable, particularly at longer horizons. Besides, after considering some specific control variables or conditions, literature finds that corporate governance behavior has a powerful effect on stock prices or returns. Despite the control variables or conditions, bear/bull periods might discriminate the effect of corporate governance on stock returns. According to the literature mentioned above, corporate governance, investment opportunities, and firm value may all be jointly determined. The sample from bull and bear periods can be used as a proxy for investment opportunities. During bear periods, with less investment opportunities, controlling shareholders have more incentives to expropriate outside investors. On the contrary, no matter how the mechanisms of corporate governance are, shareholders might gain abnormal returns during bull periods. In this case, effect of corporate governance on stock returns cannot be distinguished.

Among the related literature, Johnson et al. (2000) document that in countries with weak corporate governance during the Asian crisis of 1997-98, worse economic prospects result in more expropriation by managers and a larger fall in stock prices. Gompers et al. (2003) find that corporate governance is strongly correlated with stock returns during the 1990s. By purchasing shares of firms with strong shareholder rights and selling shares of firms with weak shareholder

rights, the abnormal returns of the portfolio are statistically significant 8.5% per year.

Similarly, Lemmon and Lins (2003) study the effect of ownership structure on value during the East Asian financial crisis. The cumulative stock returns of firms in which managers have high levels of control rights, but have separated their control and cash flow ownership, are 10-20 percentage points lower than those of other firms. Furthermore, they find no effect of control and cash flow rights separation on firm performance during the crisis for firms in which managers have low levels of control rights. According to the findings, they suggest that the ability to control the firm's assets is a necessary antecedent for expropriation of minority shareholders. For comparison, Lemmon and Lins (2003) duplicate the analysis by using data of the firms prior to the crisis. They find no differences in stock returns between firms with and without separation of cash flow rights and control rights, even when the control is relatively high. They suggest that the effects of separation on changes in stock returns are less evident prior to the crisis.

It is doubtful that the amount of expropriation will be small at good times, since controlling groups still have the incentive of maximizing their own wealth to expropriate outside shareholders. Though expropriation at good times might be less than at bad times, the effect of separation on stock returns should be statistically significant when the control is high. It inspires this paper to examine the discriminative effect of ownership structure on stock returns during bull and bear periods. This paper is complementary to that of Johnson et al. (2000), which shows that worse economic prospects result in more expropriation and a larger fall in stock prices. Further, this paper amends the expectation of Lemmon and Lins (2003) that stock returns are significantly associated with separation of ownership and control only when control rights are high.

SAMPLE AND METHODOLOGY

Sample and Hypothesis

All data of ownership structure and control variables are from the Data Bank of TEJ (Taiwan Economic Journal), the most famous economic database in Taiwan. For longer data horizons, the period ranges from 2001 to 2005. Due to special industrial characteristics, financial firms are excluded from the sample. To compute stock returns or control variables, this paper also eliminates firms whose data is insufficient, total a sample of 3,735. By using the data from 747 Taiwanese listed companies during 2001-05, this paper tests hypotheses by examining variations across companies in stock returns during bull and bear periods as the functions of the ownership structures. The main hypothesis is that, during bear periods, the discriminative effect of corporate governance on stock returns exists, but not the case for bull periods. Since shareholders might gain abnormal returns during bull periods no matter how the mechanisms of corporate governance are. During bear periods, with less investment opportunities, controlling shareholders have more incentives to expropriate outside investors even when the control of controlling group is low.

First, this paper examines the hypothesis that ownership structure is significantly correlated with stock returns but the relation depends on control rights, shown as H1. By using separation of control rights and cash flow rights as the proxy variable for ownership structure, the hypothesis H1a is that the separation is negatively correlated with stock returns only when control rights is high, not for low control rights. This hypothesis is consistent to the results of Lemmon and Lins (2003).

Hypothesis H2 is the main hypothesis that the discriminative effect of corporate governance on stock returns not only depends on control rights but also on market status. As H2a described, the discriminative effect exists during bear periods. No matter control rights are high or low, separation of control rights and cash flow rights is negatively associated with stock returns. During bear periods, with less investment opportunities, controlling shareholders have more incentives to expropriate outside investors. No matter control rights is low or high, the controlling groups of companies still have the abilities to expropriate outside investors, such as committing funds to unprofitable projects that provide private benefits or diverting resources for their personal use.

On the contrary, the discriminative effect of ownership structure on stock returns does not exist during bull periods. Referring to hypothesis H2b, during bull periods, the separation is negatively correlated with stock returns only when control rights are high. Lemmon and Lins (2003) argue that there are no differences in cumulative stock returns between firms with and without separation prior to the Asian crisis, even when the control is relatively high. At good times, the amount of expropriation of minority shareholders might be less than at bad times, but controlling groups still have the incentive of maximizing their wealth to expropriate outside shareholders. This hypothesis is to amend the expectation of Lemmon and Lins (2003). The detailed descriptions of hypotheses are as follows.

H1: The relation between ownership structure and stock returns depends on control rights.

H1a: The separation of control rights and cash flow rights is negatively correlated with stock returns only when control rights are high.

H2: Discriminative effect of ownership structure on stock returns not only depends on control rights but also on

market status.

H2a: No matter control rights are high or low, the separation of control rights and cash flow rights is negatively correlated with stock returns during bear periods.

H2b: The separation of control rights and cash flow rights is negatively correlated with stock returns during bull periods only when the control rights are high.

To control for other factors that might affect stock returns, regression models with several control variables, such as market status, control rights, firm size, debt ratio, book-to-market ratio, stock's beta, and industry, are used.

Definitions of Stock Return, Ownership, and Control Variables

The dependent variable for all of the regressions is the cumulative stock return. Using buy-and-hold strategy, yearly cumulative stock returns of Taiwanese listed companies are computed over the 2001-05 period.

Following La Porta et al. (1999), this paper traces the chain of ownership to find who has the most voting (control) rights. To define the ultimate control of a controlling group, this paper uses a commonly used cutoff, 10% ownership, above which the controlling group is assumed to have effective control. This paper defines the controlling group as the largest shareholder and people related by blood or marriage. Summarizing all the direct and indirect ownership, cash flow rights and control rights of a controlling shareholder are calculated. Control rights of the controlling group is the sum of three types of ownership: direct ownership of the controlling group, indirect shareholdings through cross-shareholding and pyramid structures, and shareholdings of corporate entities controlled by the controlling group. By identifying the owners of corporate entities that are immediate shareholders of a company, this paper uses total ownership by each controlling group as the unit of analysis. The separation of managerial ownership and control is computed as the difference between control rights and cash flow rights, i.e., cash flow rights are subtracted from control rights.

For pyramidal ownership structure, Figure 1 provides an example of the computation of control rights, cash flow rights, and separation of control rights and cash flow rights. A controlling group directly owns 20% shares of listed company A and is that of sole shareholders. In this case, both control rights and cash flow rights are 20%, with separation of control rights and cash flow rights 0%. For listed company B, which is 10% owned by listed company A and is controlled by the group. In the meantime, the family owns 30% of corporate C and controls the corporate. Thus, control rights of the controlling group are calculated through control rights from listed company A and corporate C. The control rights on listed company B is the sum of the last chain's ownership percentage of each control chain, i.e., 10% from listed company A and 5% from corporate C, with a total of 15%. As to the cash flow rights of the family on listed company B, 2% is through listed company A ($20\% \times 10\%$) and 1.5% is through corporate C, with a total of 3.5%. Then separation of control rights and cash flow rights is equal to 11.5% ($15\% - 3.5\%$). Besides, listed company B might own shares of listed company A, which forms cross-holding situation and enlarges the control rights of the group on listed company A.

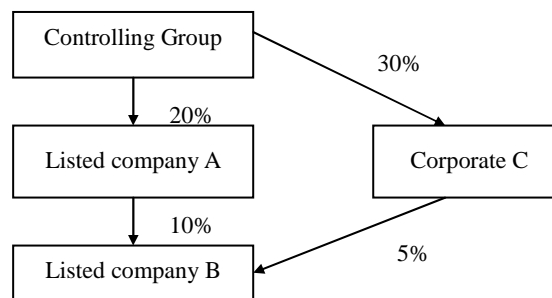


Figure 1. Ownership structure of listed companies controlled by a group

Definitions of Control Variables

Several equity characteristics that explain differences in realized returns have been shown to significantly forecast future returns, such as market factor "beta", firm size, and book-to-market ratio (Banz, 1981; Fama and French, 1993, Lakonishok et al., 1994; Jegadeesh and Titman, 1993). Besides, the industry of electron has the largest share of listed companies in Taiwan, and stock returns of those companies are quite different from the others. To control for other factors that might affect stock returns variables, this paper uses control variables including firm size, debt ratio, book-to-market ratio, stock's beta, and industry.

Firm size is measured as the log of market value of equity. Debt ratio is defined as the ratio of total liabilities to total assets. The definition of book-to-market ratio is the book value of equity divided by the market value of equity.

This paper uses the book-to-market ratio with the form of logarithm. To compute stock's beta, 12 months of return data prior to 2001 is required. The risk control, beta, is computed by regressing a company's monthly stock return each year over the 2001-05 period. To control for industry, this paper uses a dummy variable set equal to 1 when a company is classified as electronic industry, and zero otherwise.

To control the effect of separation of ownership and control on stock returns, control variables of control rights and market status are used as well. Control rights are referred to the control rights held by the controlling groups of companies. According to Lemmon and Lins (2003), the control is measured by using a dummy variable set equal to one if control rights are greater than the sample median, and zero otherwise. This paper also uses the above definition for control rights, i.e., control rights are high when the control rights are greater than the median, and low otherwise.

As to the definition of bull and bear periods, Chauvet and Potter (2000) suggest that bull (bear) market corresponds to periods of generally increasing (decreasing) market prices. The definition implies that the stock market has gone from a bull to a bear state if prices have declined for a substantial period of time since their previous (local) peak. The definition does not rule out sequences of negative price movement in stock prices during a bull market or positive ones in bear markets. Since the ownership structure and stock return variables are yearly data, this paper has to distinguish market status of each year into bear or bull period during the period of 2001-05.

Figure 2 plots the Taiwan stock price index over the period 2001-05. The market statuses of 2001, 2002 and 2004 are classified as bear periods, and bull periods otherwise. This paper uses a dummy variable set equal to one if the market status is bull period, and zero otherwise.

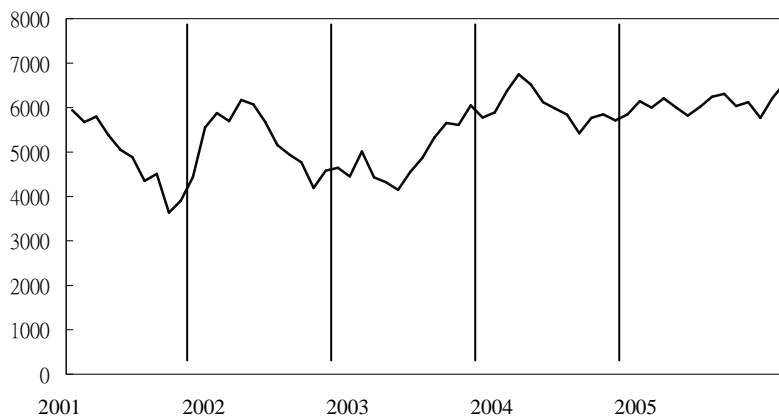


Figure 2: Taiwan stock price index during 2001-05

EMPIRICAL RESULTS

Descriptive Statistics

The sample consists of 747 Taiwanese companies that are listed on Taiwan Stock Exchange Corporation (TSEC), and results in a total data of 3,735 during the period between 2001 and 2005. This paper eliminates companies whose primary business is financial services. Table 1 shows the distribution of sample companies across industries. The industrial classification is based on company code issued by TSEC. The industry of electron has the largest share of companies in the sample, 42.3 percent, followed by textiles with 8.3 percent. The automobile sample is the smallest, accounting for 0.54 percent of the companies.

Table 1. The sample of Taiwanese listed companies by industry

Industry	Number of companies	Number of data	Percentage
Cement	8	40	1.07
Food	23	115	3.08
Plastic	24	120	3.21
Textiles	62	310	8.30
Electric Machinery	41	205	5.49
Electric Appliance	15	75	2.01
Chemical	46	230	6.16
Glass	7	35	0.94
Paper	7	35	0.94
Iron	32	160	4.28
Rubber	10	50	1.34

Automobile	4	20	0.54
Electron	316	1,580	42.30
Construction	50	250	6.69
Transportation	23	115	3.08
Leisure	10	50	1.34
General Merchandise	13	65	1.74
Others	56	280	7.50
Total	747	3,735	100.00

Mean, median, and standard deviation values of summary statistics are listed in Table 2. Cumulative stock return, measured by buy-and-hold strategy, is the dependent variable for all the regressions in this paper. The return is annual value and represents the total return of each year over the period of 2001-05. The mean, median, and standard deviation of cumulative stock returns are 17.19%, 4.93% and 63.39% respectively. The separation of control rights and cash flow rights is 5.13% on average. The control rights and cash flow rights are held by a controlling group of a company. The controlling group controls 28.11% of the shares on average. The market value of equity of a company is reported in millions of NT dollars, with an average of 13,151 millions. The debt ratio, defined as total liabilities to total assets, averages 42.27%. Book-to-market ratio, with an average of 0.1101, refers to the book value of equity divided by the market value of equity. The average of stock beta is 0.7996, and the median is 0.8074. As table 1 shows, industry of electron has 42.3% of companies in the sample, so the average of industry equals to 0.423. Finally, the average of market status is 0.4 that shows the number of sample from bear periods is larger than the sample from bull periods. Since market status is a dummy variable set equal to 1 when the market status is bull period, and zero otherwise.

Table 2. Descriptive statistics for a sample of Taiwanese listed companies

Variable	Mean	Median	Standard deviation
Cumulative stock returns	0.1719	0.0493	0.6339
Separation of control rights and cash flow rights	0.0513	0.0100	0.0934
Control rights	0.2811	0.2521	0.1626
Market value of equity	13,151	2,360	61,994
Total liabilities to total assets ratio	0.4227	0.4148	0.1820
Book-to-market ratio	0.1101	0.0947	0.1715
Beta	0.7996	0.8074	0.3900
Industry	0.4230	0.4941	0
Market status	0.4000	0	0.4870

Regression Results

To control for variables other than ownership structure that may affect stock returns, this paper uses regression models, with control variables, to analyze the effect of ownership structure on stock returns. The dependent variable for all of the regressions is the cumulative stock return, and the independent variable is separation of control rights and cash flow rights. Control variables include firm size, debt ratio, book-market-ratio, beta, industry, control rights, and market status. Most of the variable definitions are as mentioned above. Due to the characteristics of the data, "market value of equity" and "book-to-market ratio" are replaced by log of market value of equity and log of book-to-market ratio respectively.

As Table 3 shows, in model (1), the full sample model, the coefficient estimate on the separation variable is -0.2226 (p-value=0.03). The coefficient estimate indicates that the stock returns of firms are negatively correlated with separation of control rights and cash flow rights at a significant level. In models (2) through (5), regression results for sub-samples based on the degree of control rights and market status. Models (2) and (3) report results for companies that have above and below median control rights respectively. Models (4) and (5) report the results of regressions for market that is during bull and bear periods respectively.

Table 3. The effect of ownership structure on stock return controlled by control rights and market status

Variable	Full Sample (N=3,735)	Control rights=1 (N=1,867)	Control rights=0 (N=1,868)	Market Status=1 (N=1,494)	Market Status=0 (N=2,241)
	(1)	(2)	(3)	(4)	(5)
Interception	-2.5607 (0.00)	-2.7994 (0.00)	-2.3471 (0.00)	-2.5896 (0.00)	-2.6343 (0.00)
Separation of control rights and cash flow rights	-0.2226 (0.03)	-0.2345 (0.05)	-0.1585 (0.61)	-0.1560 (0.26)	-0.2479 (0.09)

Log of market value of equity	-0.0112 (0.19)	-0.0151 (0.27)	-0.0063 (0.60)	-0.0106 (0.36)	-0.0180 (0.12)
Total liabilities to total assets ratio	-0.0625 (0.28)	-0.05962 (0.48)	-0.0670 (0.40)	-0.1355 (0.07)	-0.0254 (0.75)
Log of book-to-market ratio	-0.4025 (0.00)	-0.4366 (0.00)	-0.3716 (0.00)	-0.3998 (0.00)	-0.4221 (0.00)
Beta	0.2270 (0.00)	0.2580 (0.00)	0.1955 (0.00)	0.2146 (0.00)	0.2740 (0.00)
Industry	-0.3136 (0.00)	-0.2974 (0.00)	-0.3287 (0.00)	-0.0980 (0.00)	-0.4789 (0.00)
Adjusted R-square	0.15	0.15	0.14	0.17	0.16

According to the hypotheses of H1 and H1a, the relation between ownership structure and stock returns depends on control rights, and the relation is negative only when control rights are high. To test the hypotheses, the sample is split into two groups of sample companies - high control rights and low control rights. Control rights is a dummy variable set equal to one when the control rights held by the controlling group of a company is greater than the median, and zero otherwise. Models (2) and (3) show that the effect of separation variable on stock returns is significantly negative only in the sub-sample of companies where control rights is high, with the coefficient estimate -0.2345 (p -value=0.05) in model (2). The results support the hypotheses H1 and H1a and are consistent with Lemmon and Lins (2003).

As described above, worse economic prospects result in more expropriation by managers and a larger fall in stock prices. The point of view is supported by the results of models (4) and (5) that is also consistent with Johnson et al. (2000). The coefficient estimate of separation variable is significant negative only when the market is during bear period, with a coefficient -0.2479 (p -value=0.09).

As to the hypothesis H2, discriminative effect of ownership structure on stock returns not only depends on control rights but also on market status. According to the hypothesis H2a, the effect of separation on stock returns is significantly negative during the bear periods no matter control rights are high or low. The evidence is shown as the results of models (1) and (2) in Table 4. In model (1), the coefficient estimate of the separation variable is -0.2269 (p -value=0.04) for control rights =1 and market status=0. In model (2), the coefficient estimate of the separation variable is -0.2313 (p -value=0.08) for control rights =0 and market status=0. Though the significance of separation variable in model (2) is smaller than the one in model (1), the separation of control rights and cash flow rights is significantly and negatively correlated with stock returns. During bear periods, with less investment opportunities, controlling shareholders have stronger incentives to expropriate outside investors. No matter control rights are high or low, controlling groups of companies still have the abilities to expropriate outside investors, such as committing funds to unprofitable projects that provide private benefits or diverting resources for their personal use.

As suggested in hypothesis H2b, when control rights are high, controlling groups also expropriate outside investors during bull periods. Lemmon and Lins (2003) argue that the expected amount of expropriation is relatively small when times are good. But this paper claims that the expropriation still exists in practice. Referring to the results of models (3) and (4), the separation variable is negatively correlated with stock returns during bull periods only when control rights are high. The coefficient estimates of separation variable are -0.2283 (p -value=0.03) and -0.2009 (p -value=0.17) in models (3) and (4) respectively.

Table 4. The interaction of control rights and market status

Variable	Control rights=1 & Market Status=0	Control rights=0 & Market Status=0	Control rights=1 & Market Status=1	Control rights=0 & Market Status=1
	(N=1,161)	(N=1,080)	(N=704)	(N=790)
	(1)	(2)	(3)	(4)
Interception	-2.6015 (0.00)	-2.5609 (0.00)	-2.6882 (0.00)	-2.4051 (0.00)
Separation of control rights and cash flow rights	-0.2269 (0.04)	-0.2313 (0.08)	-0.2283 (0.03)	-0.2009 (0.17)
Market value of equity	-0.0173 (0.08)	-0.0095 (0.32)	-0.0090 (0.35)	-0.0097 (0.32)
Total liabilities to total assets ratio	-0.0334 (0.62)	-0.0628 (0.34)	-0.0947 (0.15)	-0.0637 (0.33)
Log of book-to-market ratio	-0.4155 (0.00)	-0.4022 (0.00)	-0.4144 (0.00)	-0.3796 (0.00)
Beta	0.2300 (0.00)	0.2484 (0.00)	0.2495 (0.00)	0.1865 (0.00)
Industry	-0.3728 (0.00)	-0.3743 (0.00)	-0.2379 (0.00)	-0.2569 (0.00)
Adjusted R-squared	0.15	0.15	0.16	0.14

CONCLUSION

In Taiwan, through pyramid structures and cross-holdings, the controlling family enhances its control on the listed company. The direct control rights come from the shares directly owned by the family group, and the indirect control rights are given via pyramid structures and cross-holdings among firms controlled by the family group. A number of papers have found evidences that better corporate governance leads to better operating performance or firm value. But the relation between corporate governance and stock prices or returns is not concluded yet. By controlling the market status, this paper studies the effect of ownership structure on stock returns in Taiwan during the period of 2001-05. This paper finds evidences that stock returns are significantly negative with separation of ownership and control during bear periods, even when control rights are low. In summary, all the hypotheses are supported. Without controlling the market status, the separation of control rights and cash flow rights is negatively correlated with stock returns only when control rights are high. After controlling the market status, no matter control rights are high or low, the separation of control rights and cash flow rights is negatively correlated with stock returns during bear periods. On the contrary, the separation of control rights and cash flow rights is negatively correlated with stock returns during bull periods only when the control rights are high. Taken together, discriminative effect of ownership structure on stock returns exists during bear periods.

The results are complementary to that of Johnson et al. (2000), which shows that worse economic prospects result in more expropriation and a larger fall in stock prices. Further, the results amend the Lemmon and Lins (2003) results that stock returns are significantly associated with separation of ownership and control only when the management control is high.

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