CORPORATE BOARD, OWNERSHIP STRUCTURE AND THE INVOLUNTARY DELISTED FIRMS

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Abstract

The Financial Supervisory Commission in Taiwan has advocated the importance of corporate governance for several years. The purpose of this study is to act in concern with the policy through the test of the relationship between the corporate governance mechanism, especially Board of Directors' composition and ownership structure, and the involuntary delisted firms. The study extracts 58 involuntary delisted firms from Taiwan Securities Exchange (TSE) during 1997 to 2007 and matches with 112 similar control firms. The results from probit regression suggest that Board of Directors (BOD) with more number of outside independent directors, larger board size, lower ratio of shares pledged to the total shares, higher seats over control right, and lower control right over right for cash flow may reduce the likelihood of delisting. The study could become monitoring indices for internal examination system, the warning signals for investors, and the reference for the policy makers.

Keywords: Corporate governance, involuntary delisted firms, Board of Directors, gray directors, pledged shares

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1. Introduction

In the wake of corporate failures occurred in this decade, many reforms were undertaken to restore the public confidence. In the United States, the scandals of Enron, Tyco, Adelphia, WorldCom and etc. have led to the release of Sarbanes-Oxley Act of 2002, corporate governance rules of NYSE 2003, 2004, AMEX 2003, NASDAQ 2003, and so on. In Taiwan, also because of numerous scandals and frauds, the establishment of Financial Supervisory Commission (FSC), Securities and Futures Institute (SFI), Taiwan Stock Exchange (TSE), Taiwan's computerized over-the-counter market (GreTai Securities Market, GTSM), Corporate Governance Association□CGA□and together with Taiwan amended Company Law and Securities & Exchange Act show the government's esteem to the importance of corporate governance.

Among all the corporate governance topics, the quality of board oversight has drawn significant attention. Prior researches have put lots of focuses on the relationship between board composition or characteristics and corporate fraud (Beasly 1996, Sharma 2004, Uzen 2004, Chen et al. 2006). However, firms being out of market no matter voluntarily or involuntarily have become a more common phenomenon in recent years. Macey et al. (2004) indicates that more than 7,350 firms have become delisted from US stock exchanges and markets since 1995. Among half of all delisting firms were involuntary. In Taiwan, since Asian financial crises in 1997 till 2006, there have been about 123 firms delisted from the market.[15] Delisting occurs for a number of reasons including merger and acquisition, bankruptcy, liquidation, or migration to another exchange (Shuway et al. 1999). This study researches on the involuntary delisted firms in Taiwan. Among all the involuntary delisted firms, prior researches focused on financial crises caused by improper financial strategy, deteriorated financial environment or financial scandals. Nevertheless, besides the finance aspect being discussed (Chen 1999, Shumway 2001, Sueyoshi 2005), fewer studies to date are investigating the causes and effects of the delisted firms. In this study, the characteristics of corporate board and the structure of ownership are inquired as the crucial factors that are associated with the delisted firms in Taiwan.

Charitou et al. (2007) argue and show that the effectiveness of a firm's corporate governance mechanism, as proxied by the structure of board of

[15] At the end of 2006, there were 688 firms listed on the TSE, and 531 listed on the GTSM.

directors and ownership incentives, is associated with its ability to survive in the market. In Taiwan, in order to strengthen the legal base in the field of corporate governance, it amended Company Law and Securities & Exchange Act in 2006 which require the installment of independent directors and independent supervisors. This study provides the insight into the delisted firms out of Taiwan Stock Exchange list from 1997 to 2007. From a corporate governance perspective, it empirically tests the impacts of board composition, ownership structure and its related control variables on the likelihood of delisting. Results from Probit regression analysis show that firms with less independent board of directors, smaller size of the board, higher ratio of shares pledged to the total shares controlled in the hands of the BOD, higher seats over control right in BOD, and lower control right over right for cash flow are generally more likely to become delisting compared to control firms.

The remainder of the study is organizes as follows. Section 2 discusses the background and the hypotheses development. Section 3 interprets the research design. The empirical results are presented in Section 4. More supplement analyses are performed in Section 5. Finally, the conclusion is documented in Section 6.

2. Background and Hypotheses Development

2.1 The Development of Corporate Governance and the Delisted Firms in Taiwan

The notion of corporate governance can be dated back since 1930s, when Berle and Means argued about the separation of corporate control and ownership. Fama (1980) and Fama & Jenson (1983) indicate that there are both external and internal corporate governance mechanisms designed to minimize divergence between the ownership and decision control. Cochran and Wartrick (1988) define the corporate governance as a mechanism focusing on the interrelationships among different actors of the firm: shareholders, boards of directors, senior executives and other corporate stakeholders. Shleifer et al. (1997) propose that through the corporate governance, the suppliers of finance to corporations can assure themselves of getting a return on their investment. In recent decades, the Organization for Economic Co-operation and Development (OECD) especially includes corporate governance into its global issues, and supports that good corporate governance is a key to the integrity of corporations, financial institutions and markets, and central to the health of our economies and their stability. The Asian financial crisis of 1997-98 and the failure of a series of major corporations (Enron, WorldCom, and etc.) in the United States in 2001/2002 reveal the danger of *systemic* corporate governance problem.

In Taiwan, because of the severe Asian financial crises and the perceived lack of effective board oversight that contributed to the poor performance problems, Financial Supervisory Commission (FSC), Taiwan securities regulator, has started advocating the importance of corporate governance to public companies since 1998. Besides, Securities and Futures Institute (SFI), together with Taiwan Stock Exchange (TSE), Taiwan's computerized over-the-counter market (GreTai Securities Market, GTSM), and Corporate Governance Association (CGA), also introduced the system of independent directors, audit committee, etc. to the public firms. Further more, to strengthen the legal base in the field of corporate governance, Taiwan government amended Company Law and Securities & Exchange Act to reform and guide the corporations (SFI ,2006).

Macey et al. (2004) indicates that more than 7,350 firms have become delisted from US stock exchanges and markets since 1995. Dahiya and Klapper (2007) indicate that, between 1994 and 2003, the United States has the highest average annual involuntary delisting rate of 6.78%, followed by 5.65% of the United Kingdom, 4.57% of France, 3.45% of Australia, 3.39% of Canada, 2.85% of Germany, and 1.05% of Japan. Ferris *et al*. (2007) investigate involuntary delisting firms in the Asia-Pacific region from 1980 through 1999. The involuntary delisting rate is 17.4% for Thailand, 10% for Malaysia, 9.7% for Taiwan, 7.8% for Singapore, 7.3% for Indonesia, 5.5% for South Korea, 5.2% for Hong Kong, and 2.4% for Japan. Among half of all delisted firms were involuntary. In Taiwan, since Asian financial crises in 1997, there have been about 123 firms delisted from the market. Shumway (1997), Macey et al. (2004), and Panchapagesan (2004) point out that all the involuntary delisted firms experience highly significant costs after the delisting.

When investigating the causes of delisting, prior studies focus on the appearance of the accounting outcomes. Chen et al. (1999) include one-year return prior to delisting in the logit regression model, and the results suggest that accounting numbers play a crucial factor of delisting. Shumway (2001) examines the abnormal stock return for the failed firms. Altman (2001) uses the accounting variables to predict the corporate distress. Sueyoshi (2005) applies the financial ratios to analyze the problem corporations. However, besides the accounting numbers shown on the financial reports, there must be more powerful and potential influence behind the financial distress. Shumway (1999) evidences that owing to information asymmetry; the unsuspecting stockholders always experience market losses and a substantial decrease in liquidity. Marosi et al. (2007) find that firms with fewer valuable growth

opportunities, greater insider ownership, lower institutional ownership, higher leverage, and lower market momentum are more likely to go dark. Dahiya et al. (2007) present evidence that equity market delisting taken place more frequently in countries with strong shareholder rights. Charitou et al. (2007) suggest that the likelihood of delisting is related to a firm's governance characteristics and the boards are the most important in the face of financial trouble. Thus, the delisting phenomenon is arisen from not only the operational figures but also the from the board features.

2.2 Hypotheses Development

2.2.1 The Characteristics of Board of Directors

Fama and Jensen (1983) theory that role of board of directors plays a very important key in terms of internal control mechanism and management oversight. Among several important characteristics of the board of directors, board composition has received significant attention from academic researchers. Uzen et al. (2004) prove the direct relation between the board composition and the incidence of corporate fraud. O'Sullivan (2000) uses large UK samples to examine the impact of board composition and ownership structure on audit quality, and the findings were positive. Sharma (2004) supports the call for strengthening the composition and structure of board of directors in Australia. Chen et al. (2006) show the board characteristics have an effect on corporate financial fraud in China.

For the board composition, this study focuses on three parts: independent outside directors, board size and duality problem. From the prior researches, the status of independent outside directors is the most frequent issue. Fama and Jensen (1983) show that the outside directors, as representatives of shareholders, have a particularly strong incentive to prevent and detect opportunistic reporting behavior by management. Beasley (1996) confirms that no-fraud firms have boards with significantly high percentages of outside members than fraud firms. The National Association of Corporate Directors considers the professional boardroom as the one being governed by individual board members who posses characteristics including independence, diligence, and expertise (NACD 1996). Carcello et al. (2002) examine the relations between three board characteristics and audit fee (quality) and the results show the significant positive relations between board independence and the audit fees.

In Taiwan, Board of directors and Supervisors are treated by Securities and Future Bureau as important organs designed to hold managers accountable to capital providers for the misuse of firm assets. As the growth in the size of businesses, the separation of ownership from control is demanding in Taiwan (SFI, 2006). In 2002, TSE /GTSE regulate that every public company applying for listing should have at least two independent directors and one independent supervisor. And, at least one independent director must be an accounting or finance expert. And in §14-2 Securities & Exchange Act, it encourages to have at least one-fifth of the Board's directors who should be independent for all public companies. As documented, the study hypothesizes that:

H_{1a} : Outside directors are negatively related to the delisted firms.

Besides the status of outside directors, board size is another factor being considered as board characteristic. Vafeas (2000) finds that board size of 11 is the adequate size to monitor the management effectively. Jensen (1993) considers that board size beyond seven or eight are less likely to function effectively and evidences that small size of board comparatively can provide a better controlling function than large one. Beasly (1996) uses board size in the supplement analysis of board characteristics, and the result was consistent with Jensen's. Yermack (1996) finds that firms might have higher market valuation with a small board of directors. Thus, the hypothesis is:

H_{1b} : Board size is positively related to the delisted firms.

Finally, the dual appointment of CEO and chair of the board may also be a phenomenon in the board composition. The duality might cause different effects. Some researchers consider it an easier way to result in fraudulent decisions or actions, and some other researchers think that occupying the two positions with same person may make process more efficient. Jensen (1993) considers it as a way to reduce underlying agency problems. Sharma (2004) finds the significant association between duality and fraud. However, in both Beasly (1996) and Uzen et al. (2004) researches, no significant relations were shown. Accordingly, this study makes the third hypothesis under the board characteristics:

H_{1c} : Duality is related to the delisting firms.

2.2.2 The Type of Ownership Structure and the Related Controls

In Taiwan, family-related board members are pretty common phenomenon in most small- and medium-sized enterprises. Even in large, public firms, family-control is also a dominant characteristic of the board, and thus, the "family board" has substantial control over decision-making and agendas in Shareholders Meetings (SFI, 2006). Existing literatures have

documented the relationship between founding family ownership and corporate operation. Wang (2006) shows that founding family ownership is associated with higher earnings quality (lower abnormal accruals, greater earnings informativeness, and less persistence of transitory loss components in earnings). Villalonga et al. (2006) find that family ownership creates value only when the founder serves as CEO of the family or as Chairman with a hired CEO. Igor et al. (2005) find no family control associated with performance measured in terms of accounting figures. However, they indicate that board independence from founding family has positive impact on performance. Thus,

H_{2a}: Family board has impact to the delisting firms.

Since the family-controlled is defined as the final controllers who are holding over 50% of the total shares in BOD at the year end are family members, thus the operating culture in this type of ownership structure affects a firm's performance. La Prota et al. (2002) discover that among large-size enterprises in 27 rich countries, about 68.59% the controlling stock holders will involve in the operating strategy. Claessen et al. (2000) show the phenomenon that 57.1% firms in East Asia have controlling shareholders. Yeh et al. (2001) find out that 70% of the firms in Taiwan having controlling stockholders.

There are pros and cons for the family-controlled business. The good side is its having a strong leadership and cohesive management team formed by the family members. And the contrary side is its tendency to grant the right of governance over the company for the benefit of their own interests and to abuse minority shareholders. Barontini et al. (2006) indicate that although family-controlled corporations exhibit larger separation between control and cash-flow rights, their results do not support the hypothesis that family control hampers firm performance. Lin (2002) indicates that the more the controlling shareholders' control rights deviated from cash flow right, the worse the central agency problem is between controlling shareholders and minority shareholders, and the extent expropriation is particularly serious among family-controlled firms. Through the pyramid stock structure or cross- held way, the control right in the hand of controlling shareholder will always exceed his right for cash flow, and then cause the problem between the controlling stockholders and minority stockholders (Chang, 2007). Then,

H_{2b}: The difference between right of seating and right of voting increases the likelihood of delisting.

H_{2c}: The difference between right of voting and right for cash flow increases the likelihood of delisting.

Beside the stock rights, Kao et al. (2004) find out an intensively correlation with the high ratio of shares pledged to the total shares controlled in the hands of the board of directors and supervisors. Chang, (2007) proves that when the board of directors and supervisors become controlling stockholders with a high ratio of pledged shares, there is unavoidable link between these persons' personal financial status with the stock price. Chang's study also shows that till 2005, there are 48.77% of the TSE traded firms, the board of directors and supervisors pledged their stocks. This phenomenon may easily lead to manipulate the earnings and sacrifice the small shareholders. As a result,

H_{2d}: The ration of shares pledged to the total shares controlled in the hands of the board of directors increases the likelihood of delisting.

3. Research Design

3.1 Sample Selection

The samples of the delisted firms are the ones used to trade publicly in Taiwan Security Exchange (TSE)[16] during period 1997- 2007.[17] The main source is extracted from Taiwan Economic Journal (TEJ) database. The sample selection of the delisted firms is first based on the database of TEJ-Delisting, Monitored Stock, and Query Full Deal Stock, and then confirmed with the list of suspend listing firms in TSE.

During the selecting, we screen out the firms being consolidated with the other publicly traded firms, and the ones not of any financial troubles. In order to confirm the qualified status of the delisted firms, we adopt news search from two well known databases, China Times News Search and Knowledge Base Joint News Retrieval along with official website of Public Information Observatory. There are 123 delisted firms in the original pool, after excluding the financial institutes, the firms merged by other firms or groups and the firms without complete data, the result leads to 58 delisted firms. Owing to the limited sample size, each of the delisted firm is matched with one or two firms that are in the same industry, similar size, time period and healthy financial status, and the matching firm size is 112.

[16] http://www.tse.com.tw/ch/listed/suspend_listing.php

[17] Since 'Corporate Governance' module in TEJ database started the searching point in 1996, and the variables adopted information one year prior to the delisting year, the delisting samples in this study cover the period from 1997 to date.

Table 1. Identification of 58 Delisted Firms

Number of Delisting Firms from TSE in period 1997-2007	123
Less: Finance Institutes	(34)
Firms merged by other firms or groups	(16)
Convert to OTC	(2)
Missing data	(13)
Total number of delisted firms included in study	58

Table 2 presents the general information of the selected samples. In Panel A, it shows the delisting year, and the time dispersion. The largest occurrence of delisting is in 2005 (12 delistings or 20.69% of the total), and the lowest occurrence is in 1997 and 2000 (1 delisting or 1.72%). Starting from 2003, the trend becomes more obvious.

Table 2. Information of the 58 firms becoming delisted from TSE

Panel A. Delisted Year		
Year	Sample	Percentage (%)
1997	1	1.72
1998	2	3.45
2000	1	1.72
2001	5	8.62
2002	3	5.17
2003	8	13.79
2004	8	13.79
2005	12	20.69
2006	9	15.52
2007	9	15.52
Total	58	100

Table 2, Panel B shows the industry dispersion of the delisted firms. From the industry dispersion, the delisting incurred mostly in Electronics (22 delisting or 37.93%), Foods and Buildings and Constructions are the next (8 delisting or 13.79%), and Plastics, Electrical and Cable, Glass and Ceramics, Paper and Pulp are the least (only 1 delisting or 1.72%). The concentration of the industry Electronics may imply that Electronics is still the most risky industry.

Table 2. Information of the 58 firms becoming delisted from TSE (Cont.)

Panel B. Industry Dispersion			
Industry Code[a]	Industry Description	Sample	Percentage (%)
1200	Foods	8	13.79
1300	Plastics	1	1.72
1400	Textiles	7	12.07
1500	Electric Machinery	2	3.45
1600	Electrical and Cab	1	1.72
1800	Glass and Ceramics	1	1.72
1900	Paper and Pulp	1	1.72
2000	Iron and Steel	4	6.90
2200	Automobile	1	1.72
2300	Electronics	22	37.93
2500	Building and Cons.	8	13.79
9900	Others	2	3.45
Total		58	100

[a] TEJ adopts four-digit to distinguish the firms. The first digit indicates the industry code, and the second and third represent more specific details.

According to provision 50 and 50-1 of the Operating Rules of Taiwan Stock Exchange Corporation, there are various reasons leading firms to suspend the trading the securities, or such firms may apply to terminate the listing. In order to further investigate the delisting reasons, we search the information from China Times News Search, Knowledge Base Joint News Retrieval and the official website of Public Information Observatory. From the documented general reasons in Table 3, delinquent in TSE filings and rejected by Taiwan Clearing House (TCN) are the most frequent occurrence (26.1%), negative share value is the next (21.7%), and reorganization not permitted by the court is the least (1.4%).

Table 3. The Delisting Reasons

Reasons	Samples	Percentage (%)
Delinquent in TSE filings	18	26.1
Negative share value	15	21.7
Reorganization not permitted by the court	1	1.4
Rejected by the TCN Clearing House (TCN)	18	26.1
Severe Financial Fraud	6	8.7
Severe Financial Distress	11	16.0
Total	69[a]	100.0

[a] Involuntary delisting often results from violating more than one suspended reason; some firms may incur more than one reason.

To create a comparison group, it requires the creation of a control sample of non-delisting firms which are identified as being similar to the delisting firms in national stock exchange, time period, firm size, and industry four criteria[18]. The criteria are described as follows:

1. Stock Exchange: Both groups' securities are exchanged in TSE.
2. Time Period: One year prior to the delisting year.
3. Firm Size: Firms are considered similar in firm size if the total assets value is within ± 40 percent of the total assets for the delisted firms in the 3 years prior to the delisting year.
4. Industry: Firms are identified with the same four-digit code in TEJ-Industry Level (3) (The most specific group). If there is no firm matching to the above criteria 2 and 3, the procedure will go on searching to TEJ-Industry Level (2). If still can not match the pair, then the procedure will go further to TEJ-Industry Level (1).

The criteria for selecting the matching samples should be all fulfilled. Accordingly, the non-delisting firms were matched the most with the closest level 3, then level 2, and finally level 1. Since the limited sample size of 58, the matched sample may be one or two. The matching result is shown in Table 4.

[18] The way to create a matched firm control sample is also adopted by Beasly (1996), Carcello et al. (2002), Uzun et al. (2004), Sharma (2004), Chen et al. (2006), Charitou et al. (2007).

Table 4. Non-delisted firms

The dispersions Non-delisting firms in TEJ Industry Levels		
TEJ INDUSTRY LEVEL	Samples	Percentage (%)
TEJ-Industry Level (3)	70	62.50
TEJ-Industry Level (2)	23	20.54
TEJ-Industry Level (1)	19	16.96
Total	112	100

The matching procedure starts from TEJ-Industry Level (3), the most specific and closest level, if the criteria do not meet, go to TEJ-Industry Level (2), then TEJ-Industry Level (1).

3.2 Methodology

The research design of this study involves univariate and probit cross-sectional regression analysis. Consistent with Beasly (1996), Carcello et al. (2003), Sharma (2004), and Chariotu et al. (2007), the dependent variable D_i (Delisting) is measured dichotomously. The estimation is based on a choice-based sample, in which there are about one third (58 firms) of the firms experienced delisting from TSE and two third (112 firms) of firms did not, and the total sample is 170 firms. To study the link between the likelihood of delisting and corporate governance, given that we have matched-pairs samples of delisted and control firms, a single-equation approach model is estimated as follows:

$$D_i(delisting) = \alpha_1 OUT_i + \alpha_2 SIZE_i + \alpha_3 DUAL_i + \alpha_4 FAMILY_i + \alpha_5 SEATCON_i + \alpha_6 CONCASH_i + \alpha_{7i} PLE + \alpha_8 TA_i + \alpha_9 MTB_i + \alpha_{10} LEV_i + \alpha_{11} STKRET_i + \alpha_{12} ROA_i$$

where

i	= Firm 1 to 170;
D (Delisting)	= 1 for a firm that is delisting, and 0 otherwise;
OUT	= Proportion of outside board members who are independent directors;
SIZE	= The size of directors on the board;
DUAL	= 1 if the chair of the board is also the CEO, and 0 otherwise;
FAMILY	= 1 if the final controller (a Family) at the end of year hold shares in the BOD exceed 50% of the total shares in BOD, 0 otherwise;
SEATCON	= The ratio of the right of seating over the right of control;
CONCASH	= The ratio of the right of control over the right for cash flow;
PLE	= The ratio of shares pledged in the board of directors;
TA	= The natural logarithm of total assets;
MTB	= The ratio of market value of equity to book value of equity;
LEV	= The ratio of total liabilities to total assets;
STKRET	= Annual stock return;
ROA	= Operating income to total assets.

The independent variables are measured of the year prior to the delisting. In addition to the seven test variables, we control the financial variables, TA, MTB, LEV, RETURN, and ROA (these variables are referred from Charitou, 2007). Total assets control for differences in firm size; market to book ratio controls for growth opportunities; leverage ratio controls for financial risk; and return on assets controls for differences in operating performance.

4. Empirical Results

To test the relation between the board of directors' composition, the ownership structure and the likelihood of delisting from TSE, we use both univariate comparisons and a multivariate probit regression.

4.1 Univariate Results

For the univariate test we compare the test and control variables across the delisting firms and non-delisting firms to see if there are significant differences. The results of univariate are presented in Table 5. For each variable, the mean (median) is presented in the top (bottom) row, and with the parametric *t*-test and the non-parametric Wilcoxon rank-sum test respectively. Most of the variables appear to be significant univariate difference across the samples. For the board of directors' composition, OUT and SIZE have the strongest significant difference ($p < 0.01$). Comply with the prior literatures**,** delisted firms have fewer proportion of independent outside directors (t = -2.823, Wilcoxon z = -2.331).

However, for the board size (t = -3.08, Wilcoxon z = -3.767), opposite to prior researches, the delisted firms are with smaller board size. Regarding the duality effect, consistent with Beasly 1996, Sharma 2004, and Chen 2006, DUAL, the chair of the board is also the CEO, does not have significant difference. The above three results reveal that only H_{1a} (proportion of outside board members) is supported.

Next, about the ownership structure, the deviation of the rights SEATCON and CONCASH, and the stocks pledged ratio PLE show the strongest difference ($p < 0.01$), and the family owned status FAMILY has a minor but acceptable difference ($p < 0.10$). The significant result of the family owned status (FAMILY) (t = 1.925, Wilcoxon z = -1.846) supports H_{2a}, the ratio of right of seating over right of control (SEATCON) (t = 4.455, Wilcoxon z = 4.261) supports H_{2b}, the ratio of the right of control and right for cash flow (CONCASH) (t = -2.088, Wilcoxon z = -2.858) supports H_{2c}. and the higher ratio of shares pledged to the total shares controlled in the hands of the board of directors and supervisors (PLE) (t = 3.266, Wilcoxon z = 1.880) indicates that this scenario may easily tangle the controlling shareholders' personal finance with the firm's stock performance, and the result supports H_{2d}. These consequences show the intentions and ways of ownership structure in most of the delisting firms to manipulate the operating.

Finally, focusing on the control variables, only leverage, stock return, and return to asset are with the strongest significance, delisted firms are with greater financial leverage(LEV) (t = 8.786, Wilcoxon z = 8.390), lower annual stock return (STKRETURN) (t = -5.970, Wilcoxon z = -6.483) and lower profitability (ROA) (t = -4.941, Wilcoxon z = -7.016). The firm's size and market to book ratio do not show significant difference.

Table 6 presents Pearson (Spearman) correlations between the variables used in the probit regressions. Delisting is significantly, negatively correlated with outside BOD, board size, ratio of the right of the control over the right for cash flow, annual stock return and return on assets. Family owned, more ratios of shares pledged in BOD, higher ratio of seats over control rights, and frequent leverage may cause more likelihood of delisting.

4.2 Multivariate Tests

The results in Table 5 primarily have descriptive value. Accordingly, we proceed with multivariate tests linking the overall likelihood of delisting with the independent variables in Table 7. The results of the probit regressions are shown in Table 7. The first column lists the variables. The second, third and fourth columns show predicted signs, the coefficients and Z-statistics of the probit model. The board size has a negative sign and is statistically significant (Z = -2.21, $p < 0.05$), and this result supports the correlation with the delisting. The ratio of shares pledged to the total shares controlled in the hands of the board of directors is significant positive (Z =2.18, $p < 0.05$), which reveals that the higher the pledged ratio, the more probability of delisting. Notably, OUT, DUAL, FAMILY, SEATCON, and CONCASH and are not significant. Results on the control variables are mostly consistent with univariate results, suggesting delisted firms are with smaller size, fewer growth opportunities, lower leverage, and poorer operating performance.

5. Supplement Analysis

Independent board of directors is an important main policy advocated by the Financial Supervisory Commission. Thus, in order to confirm the significance of outside directors, we replace OUT as the ratio of independent and gray directors on the board.[19] The results of the probit regressions are shown in Table 8. Board independence becomes statistically significant (Z =2.59). Also, we find evidence that firms with smaller boards (Z = -2.13) and higher the seats over the control (t=2.48) are more likely to be delisted. Results on the control variables are largely consistent with Table 7. Thus, the paper's main conclusion that most characteristics of the board composition and ownership structure may lead to delisting fate after controlling some financial status.

[19]Gray directors, who have a fiduciary relation to the firm, include citizen stockholders, institution stockholders, business, financial or legal relationship, or the representatives of the firm.

Table 5. Univariate test for 58 delisted and 112 matched control firms

Sample size	Delisted	Control	Difference	t-Statistics	Wilcoxon
Independent Variables					
OUT	3.70	8.85	-5.15	-2.823***	
	0	0	0		-2.331**
SIZE	7.95	9.59	-1.64	-3.080***	
	7	9	-2		-3.767***
DUAL	.33	.24	.09	1.165	
	0	0	0		-1.200
FAMILY	.74	.60	.14	1.925*	
	1	1	0		-1.846*
SEATCON	57.50	37.70	19.80	4.455***	
	64.2	37.18	27.02		4.261***
CONCASH	3.67	6.97	-3.30	-2.088**	
	0.10	1.21	-1.11		-2.853***
PLE	27.59	13.42	14.17	3.266***	
	7.83	0.36	7.47		1.880*
Control Variables					
TA (in $ million)	9308	11543	-2235	-.579	
	3205	5154	-1949		-2.102**
MTB	161.91	128.48	33.43	0.584	
	53.94	98.11	-44.17		-3.657***
LEV	91.64	45.28	46.36	8.786***	
	89.87	43.76	46.11		-8.390***
RETURN	-43.95	9.43	-53.38	-5.970***	
	-52.21	-0.04	-52.17		-6.483***
ROA	-10.46	2.61	-13.07	-4.941***	
	-3.61	1.92	-5.53		-7.016***

The mean (median) of each variable is presented in the top (bottom). Each delisted firm is matched to one or two control firms that are also traded on TSE. The t-test and Wilcoxon rank-sum test were used to test for the significance of the result. Significant (two-tailed) is denoted by ***, **, * for $p < 0.01$, $p < 0.05$, $P < 0.10$, respectively.

Table 6. Pearson (Spearman) correlations below (above) the diagonal among dependent variable, control variable, and the likelihood of an involuntary delisting

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.Delisting Dummy	1.00	-0.18**	-0.29***	0.09	0.15*	0.33***	-0.22***	0.14*	-0.16**	-0.28***	0.65***	-0.50***	-0.54***
2. OUT	-0.19**	1.00	0.37***	0.02	-0.11	-0.54***	0.23***	-0.23***	0.23***	0.37***	-0.26***	0.23***	0.30***
3. SIZE	-0.23***	0.16**	1.00	-0.24***	-0.08	-0.41***	0.31***	-0.19**	0.30***	0.37***	-0.25***	0.19**	0.19**
4. DUAL	0.09	0.02	-0.21***	1.00	0.16**	0.07	-0.16**	0.12	-0.09	-0.13*	-0.00	-0.11	-0.09
5. PLE	0.24***	-0.08	-0.01	0.11	1.00	0.10	-0.13	0.14*	-0.06	-0.20***	0.14*	-0.20***	-0.07
6. SEATCON	0.34***	-0.51***	-0.23***	0.08	0.06	1.00	-0.26***	0.41***	0.01	-0.48***	0.36***	-0.27***	-0.34***
7. CONCASH	-0.14**	0.23***	0.13	-0.20***	-0.05	-0.28***	1.00	-0.14*	0.22***	0.18**	-0.21***	-0.22***	0.26***
8. FAMILY	0.14*	-0.21***	-0.08	0.12	0.17**	0.38***	-0.06	1.00	-0.16**	-0.30***	010	-0.15**	-0.08
9. TA	-0.14*	0.23***	0.26***	-0.10	-0.11	0.03	0.29***	-0.15*	1.00	0.10	-0.11	0.13*	0.18**
10 MTB	0.06	0.22***	0.11	-0.13*	-0.01	-0.22***	0.08	-0.21***	-0.02	1.00	-0.35***	0.46***	0.44***
11. LEV	0.64***	-0.25***	-0.17**	-0.01	0.19**	0.35***	-0.13*	0.15*	-0.16**	-0.03	1.00	-0.46***	-0.63***
12. RETURN	-0.42***	0.25***	0.14*	-0.04	-0.20***	-0.27***	0.18**	-0.22***	0.18**	0.19**	-0.38***	1.00	0.53***
13. ROA	-0.44***	0.21***	0.06	-0.08	0.01	-0.18**	0.14*	-0.05	0.19**	0.09	-0.51***	0.41***	1.00

This table shows Pearson and Spearman pair wise correlations among corporate governance variables, control variables and the likelihood of an involuntary delisting. Significance (two-tailed) is denoted by ***, **, * for $p < 0.01$, $p < 0.05$, $P < 0.10$, respectively.

Table 7. Probit regression on 58 delisted and 112 matched control firms

	Predicted sign	Coefficient	Z-Statistic
Independent Variables			
OUT	-	-0.021	1.46
SIZE	+	-0.139	-2.21**
DUAL	?	0.349	1.04
FAMILY	+	0.029	0.08
SEATCON	+	0.011	1.50
CONCASH	+	0.006	0.36
PLE	+	0.012	2.18**
Control variables			
TA	-	-0.012	-0.08
MTB	+	0.004	2.94***
LEV	+	0.031	3.99***
RETURN	-	-0.010	-2.71***
ROA	-	-0.038	-1.71*
Pseudo R^2		0.556	
Chi-square		121.34***	

This table reports the results of a probit regression. The Z-value was used to test for the significance of the variables. Significant (two-tailed) is denoted by ***, **, * for $p < 0.01$, $p < 0.05$, $P < 0.10$, respectively.

Table 8. Supplement Analysis

	Coefficient	Z-Statistic
Independent Variables		
Gray	0.027	2.59***
SIZE	-0.137	-2.13**
DUAL	0.464	1.35
PLE	0.008	1.38
SEATCON	0.032	2.48**
CONCASH	0.024	1.34
Control variables		
FAMILY	0.282	0.57
TA	-0.079	-0.51
MTB	0.003	2.11**
LEV	0.033	4.01***
RETURN	-0.009	-2.53**
ROA	-0.032	-1.40
Pseudo R^2	0.567	
Chi-square	123.74***	

This table reports the results of a probit regression. The Z-value was used to test for the significance of the variables. The only difference between Table 7 and Table 8 is the first independent variable, OUT is replaced by Gray. Significant (two-tailed) is denoted by ***, **, * for $p < 0.01$, $p < 0.05$, $P < 0.10$, respectively.

6. Conclusions

The Financial Supervisory Commission in Taiwan has advocated the importance of corporate governance for several years. It further amended Company Law and Securities & Exchange Act to show the esteem to this issue. The purpose of this study is to act in concern with the policy through the examination of corporate governance mechanism in delisted firms. The study is designed to confirm that board of directors' characteristics and ownership structures are primary determinants of the firms' survival ability in the market.

The univariate empirical results suggest that firms with more number of outside independent directors, larger size of board of directors, fewer family control right, fewer rights for seats over control, more rights for control over cash flow and fewer ratio of shares pledged to the total shares controlled in the hands of the board of directors are generally less likely to become delisted. The duality is a pretty common phenomenon in most firms and does not have significant effect on delisting. In multivariate

empirical test, only board size and the ratio of stocks pledged are significant. For the independent board of directors, it is not significant in the multivariate test, however, after adding gray component in the variable, the outside directors also become significant. The results more support the importance of the independent roles in the board of directors when monitoring the corporate.

Delisting may sacrifice not only the firm's fate but also huge investors' costs. Examining the characteristics of the board of directors and the structures of ownership may avoid the manipulation of the earnings. The results of this study could become monitoring indices for internal examination system, the warning signals for investors, and the reference for the policy makers.

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