

The Impact of Foreign Direct Investment on Board Structure and Firm Performance: Evidence from Taiwan

Abstract:

This article explores the impact of foreign capital on firm's board structure and financial performance in Taiwan. The analysis of 150 largest Taiwanese companies listed publicly from 1998 to 2006 shows the foreign investors are reluctant to improve the quality of corporate governance by placing more independent directors on the board. Foreign ownership has no contribution to a firm's stock market return. Moreover, the effect of foreign ownership is moderated by a firm's level of ownership concentration, proportion of manager ownership, level of industrial concentration and industrial growth rate. This research not only provides new evidence that the economic view convergence thesis misrepresents contemporary globalisation, but also contributes to debates on globalization and convergence of business systems, institutional change and corporate governance systems.

Introduction

Globalisation entails a lifting of barriers to the mobility of capital, products, and labour, leading to severe intensification of competition for these factors across borders by firms and countries (Khanna, Kogan, Palepu, 2001). Of all the drivers of globalisation, cross border investment is probably the most visible and the most important manifestation of the globalisation process (Görg and Greenaway, 2003). The major foreign investment has come from American and British financial institutions. According to a recent study of the Conference Board (2002): about 76% of the financial assets in the world's top five markets are held by US and UK investors; and 18% of the portfolio of the 25 largest US pension funds is in foreign markets. The huge outflow of Anglo-American capital has led to a remarkable resurgence in the study of corporate governance, and a lively debate about whether foreign investment will converge domestic corporate governance systems toward the Anglo-American model.

Scholars have entered into this debate with gusto. A widespread view is that one or the other model is economically superior and that there is a convergence towards the model of 'best practice' (Vitols, 2001). Stemming from neo-classical economics, convergence thesis suggests that as national boundaries are eroded in the political, technological and business arenas, so too local differences in society will be eroded, with the end result being one 'global' pattern (Morrell, 2005). Institutional researchers take the opposite view that the force of the globalisation of capital markets will meet too much resistance in domestic economic systems and will stop the convergence process (e.g., Aoki, 1984;

Bebchuk and Roe, 1999). However, despite these ongoing debates, there has been exceedingly little empirical work confronting the interplay between corporate governance and globalisation in general and foreign investment in particular (Khanna et al., 2001).

Furthermore, the increase of foreign investment has also heated theoretical conflicts and polemics on the impact of foreign ownership on companies' financial performance in the host countries (King, 2000). Scholars of the modernization school and the neoclassical development economists advocate that foreign investment can provide crucial help in modernizing the economy in the host country, improve the corporate governance system, and consequently enhance companies' financial performance (Dobosiewicz, 1992; Black et al, 2006; Klapper and Love, 2004). In stark contrast to this assessment, dependency and world systems theorists view foreign investment as the advanced guard of a neo-colonial economic order that has brought increasing poverty to the South and wealth to the North (Galtung, 1971; Cardoso and Faletto, 1979; Bornschier and Chase-Dunn, 1985; O'Hearn, 1989; cited in King 2002). Although these arguments are theoretically reasonable and have their own empirical supports in literature, the volatility of these empirical results suggests that we must get more insights into the research in globalization. As Weick (1979) indicates that no theory is accurate in all contexts, the choice of theories may be contingent upon institutional contexts in a particular country.

This article tends to fill in the empirical void of the above-mentioned theories by exploring the impact of foreign capital on firm's board structure and financial

performance in Taiwan. We first conduct a critical review of the relevant theories in globalisation and comparative capitalism studies. We aver that both convergence and divergence thesis have inherent shortcomings. The unmet theoretical challenge in comparative studies remains to conceptualize the change of corporate governance with the theory of new institutionalism (DiMaggio and Powell, 1991) and the revised version of path dependency (Bebchuk and Roe, 1999). Further, we examine the effect of foreign ownership on a firm's level of board independence and its stock market return. In contrast to the traditional universal analysis approach in economics literature, our sociological contingency approach assesses how a firm's embeddedness in the existing system, as measured by the level of ownership concentration and ownership held by managers as well as Taiwanese financial institutes, moderates the influence of foreign ownership. Furthermore, inspiring from the managerial discretion theory in organisational sociology (Hambrick and Finkelstein, 1987), we also take a firm's embeddedness in its industry contexts into account.

We test our hypotheses in a study of 150 largest Taiwanese companies listed publicly from 1998 to 2006 (i.e. 1122 observations). The results show that foreign investors are reluctant to improve the quality of corporate governance by placing more independent directors on the board, as that would prevent foreign investors and other block-holders from enjoying information asymmetries and from depriving minority shareholders of their rights. This research not only provides new evidence that the economic view convergence thesis misrepresents contemporary globalisation, but also contributes to debates on globalization and convergence of business systems, institutional change and

corporate governance systems.

2. Theoretical Framework

The corporate governance models have a considerable variation around the world. Although the US model of corporate governance is the most notorious, national differences exist as to what constitutes the *raison d'être* of companies (the corporate objective), and the answer to the question “for whom is the corporation governed?” will vary from country to country (Gregory, 2006), for example, the intricate shareholding structures of *keiretsus* in Japan, the heavy presence of banks in the equity of German firms, the *intérêt social* in France, and the *chaebols* in South Korea. Generally speaking, there are two different systems of corporate governance, which correspond to Liberal Market Economies (LMEs) and Coordinated Market Economies (CMEs). The liberal market economies that are common in Anglo-American countries tend to give priority to the interests of shareholders and only shareholders enjoy strong formalized links with top managers. In the coordinated market economies that one finds in Continental Europe and Eastern Asia, the interests of a variety of firm constituencies—including employees, suppliers, customers, and the communities where companies are located in—are to be balanced against each other in management decision-making (Kelly et al., 1997; Vitols, 2001).

Firms in the liberal market economies coordinate their activities primarily via hierarchies and competitive market arrangements (Williamson, 1985). Traditional approach to governance a firm in the liberal market economies is concerned with the

fundamental conflict of interest between principals and managers. In the 1990s, the agency problems became more and more significant, as of the rise of institutional investor, a kind of investors who manager huge pools of financial assets by using modern portfolio techniques (Ahmadjian and Robbins, 2005). Since outperformance of standardized benchmark indexes is crucial for many professional 'money managers' to win customers and stay ahead of competition, institutional investors intend to tighten the monitoring their portfolio companies through a limited number of financial indicators and conduct their shareholder value conception of control (Fligstein, 2001). The distinct ideology of corporate governance brought by institutional investors is that the firm should maximize shareholder value because shareholders, both large and small, are the ultimate owners and managers, as agents of principals, exist to deliver a return in investment to shareholders (Davis and Thompson, 1994; Fligstein, 2001). The ideology of maximizing shareholder value becomes the mantra taught business schools and is adopted by investors and the business press (Ahmadjian and Robbins, 2005). The efficiency of regulating mechanisms in the shareholder model is thus highly conditioned on the efficiency of the capital market, high standards of financial information disclosure, and independent board of director that can discipline managers and protect shareholders' interests (Jensen and Ruback, 1983).

In coordinated market economies, firms depend more heavily on nonmarket relationships to coordinate their endeavours with other actors and to construct their core competencies. These non-market modes of coordination generally entail more extensive relational or incomplete contracting, network monitoring based on the

exchange of private information inside networks, and more reliance on collaborative, as opposed to competitive, relationships to build the competencies of the firm (Hall and Soskice, 2001). Financial markets in the coordinated market economies are less developed than in the liberal market economies. Therefore, firm's capital needs are financed by dominant shareholders that either individually or collectively own large control blocks in the capital of companies (e.g., banks, insurance companies, other industrial companies).

Whereas dominant shareholders engage in a close monitoring of top management actions in the stakeholder model of corporate governance, other constituencies, such as employees, trade unions and suppliers, are also likely to monitor managerial actions (Vitols, 2001, Kranen and Schmidt, 2003). Therefore, the objectives assigned to companies are often multi-dimensional instead of being only focused on shareholder value maximisation. Boards of directors are mandated to preserve the internal balance of control between the various constituencies (Plihon et al., 2003). In certain countries, internal communication between employees or trade unions and employers is institutionalised in corporate law. The effectiveness of this model of regulation depends on two conditions: the existence of a legal framework that precisely defines the functions of each stakeholder and the ability of stakeholder representatives to take actions in the interests of their principals (Plihon et al., 2003). The traditional German model is a typical example of the stakeholder model.

Globalisation and the Change of Corporate Governance System

In the early 1990s, the very foundation of the stakeholder systems began to be undermined by increasing globalization of capital market. Institutional investors, especially those from the Anglo-American economies, looked beyond their own national borders for investment opportunities (Useem, 1998). For example, between 1990 and 1998, Americans increased their holding of foreign shares from \$197.3 million to \$1.4 trillion (Steinmetz, 1999). Foreign shareholdings in Japanese stocks increased from about 5% in 1990 to 20% in 2001 (Ahmadjian and Robbins, 2005). The equity holding of foreign investors (notably the Anglo-American institutional investors), grew substantially from 10% in 1985 to 35% in 1997 in Paris stock exchange (Morin 2000). Concurrently, the strong banking systems that supported stakeholder systems declined, as many banks in Germany and Japan shifted their strategies from relationship banking toward investment banking and capital markets (Lane, 2003; Hoshi and Kashyap, 2001). The globalisation of international capital brought shareholder and stakeholder model of corporate governance into direct contact and sparked policy debates over the transportability of best practices (Guillén, 2000; Rubach and Sebor, 1998; Thomas and Waring, 1999). What the salient national differences in governance system are and how the system should best be conceptualized remain hotly debates (Gedajlovic and Shapiro, 1998; O'Sullivan, 2000; Pedersen and Thomsen, 1997; Prowse, 1995; Shleifer and Vishny, 1997; Thomsen and Pedersen, 2000). In general, research on comparative capitalism systems offers two explanations

for the clash of different corporate governance models.

Convergence Thesis

A widespread view is that one or the other model is economically superior and that there is a convergence towards the model of 'best practice' (Vitols, 2001). Stemming from neo-classical economics, convergence thesis suggests that as national boundaries are eroded in the political, technological and business arenas, so too local differences in society will be eroded, with the end result being one 'global' pattern (Morrell, 2005). Proponents of shareholder models proclaim the end of stakeholder model. They argue that the Anglo-American model demonstrates the greater efficiency while the stakeholder model is outdated and inferior (Rajan and Zingales, 2003; Coffee, 1999). "The [German and Japanese] model is itself quietly being dismantled. For as an equity culture has spread in Germany, France, and even in Japan and Italy, these countries have been inexorably evolving in an American direction" (The Economist, 2001). Since international capital markets are increasingly dominated by diversified portfolio investors seeking high returns, companies have to adopt the shareholder model or be starved of the external capital needed to invest and survive (Vitols, 2001). Thus, convergence theorists advocate governments in countries where the stakeholder model is predominant to abandon the institutions promoting stakeholding (e.g., blockholders, few market-oriented rules for information disclosure, weak managerial incentive and great supply of debt) and adopt those for shareholder model (e.g. markets for corporate control, legal regulation, contractual incentives and independent board of director) (cf.

Morrell, 2005).

Divergence Thesis

Institutional researchers disagree with the convergence thesis. According to Aguilera and Jackson (2003), there is no one best way to organize an economy. National diversity of capitalism reflects various institutional constraints stemming from coercive political regulation (Roe, 1994), imitation of cognitive models in response to uncertainty (Dobbin, 1994), or other normative pressures to establish legitimacy (Biggart, 1991; Hamilton and Biggart, 1988). Institutions may also create opportunities for specialization around diverse economic logics and thereby yield comparative institutional advantages for different business systems (Whitley, 1999). For example, the Anglo-American capitalism is suitable for radical innovation while the stakeholder economies of Japan and Germany encourage long-term, incremental innovations (Hall and Soskice, 2001). The study of Guillen (2001) also illustrates how particular configurations of actors and institutions combined with distinctive trajectories of development have resulted in different areas of specialization in South Korea, Argentina, and Spain.

The Unmet Theoretical Challenge

Both convergence and divergence thesis have inherent shortcomings. There is increasing recognition that the complexity of economic globalization generates 'patterns of both economic convergence and divergence' not captured by either of these

theories (McGrew, 2005). From neo-classical economics perspectives, convergence thesis reflects an under-socialized view of corporate governance. It simply assumes that self-interested investors rationally maximize their own personal economic gains. In fact, different investors (such as banks, pension funds, founders, etc) pursue different interests, particularly when investors are themselves organization governed by institutionally defined rules (Aguilera and Jackson, 2003). Moreover, convergence thesis overlooks important interdependencies among other stakeholders intra- and inter-firm (cf. Freeman, 1984). In short, convergence thesis retains a thin view of the institutional environment influencing corporate governance (Lubatkin, Lane, Collin and Very, 2001).

Divergence thesis, on the other hand, runs the danger of presenting an implicitly over-socialized perspective that views institutional effects too broadly. It over-stylizes the coherence of national models and neglects to specify institutional-organisational linkage. Hence, divergence thesis is unable to better integrate the study of different institutional domains and how, in turn, these domains shape stakeholder interests and their interactions within corporate governance at the firm level (cf. Aguilera and Jackson, 2003). The oversight of divergence thesis also results in deficits in explaining the change of corporate governance system. When a new logic has replaced the old one or a new actor gets a superior position in the system, the balance among old institutions becomes unstable. Furthermore, divergence thesis analyzes transformation in a static way and consequently mistakes a temporary phenomenon for the final outcome.

Therefore, the unmet theoretical challenge in comparative studies remains to

conceptualize the change of corporate governance with the theory of new institutionalism (DiMaggio and Powell, 1991) and the revised version of path dependency (Bebchuk and Roe, 1999). We view that any economic action is embedded in different social contexts (Weber, 1978; Dacin, Ventresca and Beal, 1999; Granovetter, 1985) and constrained by noneconomic objectives or supported by noneconomic social ties (Streeck, 2002). Over time, institutions with contrasting properties find balance, as one makes up for the deficiencies of the other (Kang, 2006) and various institutional elements tend to complement and reinforce each other (Hall and Soskice, 2001).

Based on the foregoing discussion, we outline our general argument as follow. Foreign investors (especially those from the US and UK) care primarily about the return on their investment in financial market. When these shareholders invest in a stakeholder system, their interests clash with those of existing shareholders and provided they have the mechanisms to do so, foreign investors try to influence the board structure of the firm to maximize their value. The influence of these foreign shareholders, however, depends on a firm's embeddedness in the existing system and in its industrial context; the more it is embedded, the more able it will be to resist foreign influence.

The Financial Market and System of Corporate Governance in Taiwan

Traditionally, Taiwan's corporations rely heavily on internal equity. That is because prior to the 1990s, the financial sector of Taiwan was a heavily regulated industry with special licensing rules. The healthy credit regulatory regime created by the Ministry of

Finance and the Central Bank led the banking institutions to take a more cautious approach in making credit loans (Chang, 2006, p.C2-C3).

However, under the pressure of accelerating financial integration in the late 1990s, liberalisation of Taiwan's financial market appeared to be an inevitable trend. In order to sharpen the competitive edge of Taiwan's financial market and to secure its future growth, the first-ever comprehensive financial reform in the history of Taiwan was initiated during the period of 2001 to 2002 (Chang, 2006). Various laws were enacted, such as Financial Holding Company Act in 2001, which enables the creation of financial holding companies for engaging in the cross-selling of various financial products (see www.law.moj.gov.tw), and also opens up the opportunity for existing foreign financial holding companies to acquire local financial institutions even without having to set up a presence in Taiwan.

Since then, Taiwan's capital market grows quickly. The liberalisation of Taiwan's capital market attracted huge foreign capital. The most important recent development of foreign portfolio investment in Taiwan is the abolition of the Qualified Foreign Institutional Investor (QFII) system of regulation in October 2003 (Young, 2006). The magnitude of foreign investments in Taiwan over the period of 2000-2006, the foreign equity investment raised from 33,410 in 2000 to 174,677 million US dollars in 2006. In 1998, foreign funds accounted for less than 4% of the total market value of Taiwan's listed companies (Chang, 2006). However, the average foreign equity holding of top 150 Taiwanese companies was over 20% in 2006.

The growth of Taiwan's financial market and the entry of international investors have

led to a significant change in the sources of financing. Leading corporations have come to look to external finance far more than in the past. In the years following the 1997 crisis, external corporate financing across the rest of ex-Japan East Asia has averaged about 2.5% of GDP while the figure for Taiwan jumped from 1.49% for the first half of the period to 5.29% for the recent half. As Taiwan's companies become more dependent on external financing in general, and equity financing in particular, the need for credible corporate governance becomes more critical (Young, 2006).

There is a critical distinction between the workings of corporate governance in the West (especially the US and UK) where shareholdings tend to be widely dispersed and control is in the hands of hired management and in Taiwan where shareholdings are more concentrated and control is often in the hands of the founders and their families.

In the wake of the Asian financial crises in 1998, the Taiwan Securities and Futures Commission (TSFC) began to emphasize the importance of corporate governance for publicly held companies. Since then, Taiwan has introduced a number of new measures affecting the structure of corporate boards and supervisory commissions (Wisconsin International Corporate Governance Initiative, 2006). Enhancing board independence were the principal emphasis of the January, 2006 amendments to Taiwan's Securities & Exchange Act. Numerous new measures generally have been introduced for the purpose of enhancing board independence so as to improve corporate performance and prevent self-dealing and fraudulent misconduct. Although there is no direct evidence that it was the influence of foreign capital that led to Taiwan's corporate governance reform, there is every reason to believe that foreign investors improve the quality of

corporate governance in Taiwan, which herein refers to the level of board independence.

Hypotheses

Main Effect of Foreign Ownership

Foreign investors enter Taiwan with an ideology of Anglo-American investor capitalism, in which maximizing shareholder value is the ultimate goal of the firm, and increasing the level of independence of the board is appropriate and necessary means to that end. Much has reported the positive impact of foreign investment on the quality of East Asian corporate governance and these findings are not surprising given examples of many international institutional investors, such as U.S.-based CalPERS, TIAA-CREFF, and Fidelity, have been active in corporate governance issues and more transparency in their invested companies (Khanna and Palepu, 1999; Ananchotikul, 2006). These institutional investors intentionally choose firms with poor corporate governance, which provide opportunities for them to generate profits by reforming their corporate governance systems which will increase firm market values (Smith, 1996; Pinto, 2006). Therefore, we hypothesize that:

Hypothesis 1: the greater the percentage of a firm's shares held by foreign investors, the higher its level of board independence.

Meanwhile, Scholars of the modernization school (for example, Lewis, 1948; Rostow, 1960; McClelland, 1964; and Apter, 1965), allied with the neoclassical development economists (for example, Sachs, 1991; Sachs and Lipton, 1990; Aslund, 1995), argue that foreign investment can provide crucial help in modernizing the economy in the

host country, improve the corporate governance system, and consequently enhance companies' financial performance (Dobosiewicz, 1992; Black et al, 2006; Klapper and Love, 2004). The involvement of foreign shareholdings in a company may be interpreted by other investors as the board of the company can promote the efficient use of resources, assist managers in making sure that the company is in compliance with legislative regulations, and provide outsiders with oversight of the use of corporate assets. As a result, the confidence of both domestic and international investors is improved and the firm's stock market return, the ultimate arbiter of financial performance, is increased, for example, foreign institutional investment in India is associated significant increase in the value of Tobin's Q, a proxy for stock market performance (Khanna and Palepu, 1999). Thus, we hypothesize that:

Hypothesis 2: the greater the percentage of a firm's shares held by foreign investors, the higher its stock market returns.

Embeddedness in the Existing System

Since the Anglo-American model has demonstrated the greater efficiency and the stakeholder model is outdated and inferior (Rajan and Zingales, 2003; Coffee, 1999), the omnipresent of foreign ownership in Taiwan's financial market will bring the best governance mechanisms to Taiwan's system of corporate governance. However, sociologists proclaim that the institutions of all national systems are shaped not only by economic efficiency, but also by history and politics. The corporate governance structure of a firm is the result of depend on the structures with which the corporate started. When foreign shareholders invest in Taiwan financial market and try to

influence management behaviour to maximize their own returns, their interests clash with those of existing shareholders, especially the ultimate shareholders.

Ownership concentrated in the hands of the few large shareholders is commonly considered a governance mechanism in the western economics, because large shareholders should have both the incentive and the power to monitor the firm's operations and management effectively (Shleifer and Vishny, 1997). However, the protection of minority shareholders is still relatively weak in Taiwan. A study by World Bank shows that, Taiwan's score of Investor Protection Index falls roughly in the middle, receiving lower score on the liability of directors and availability of shareholder litigation (Young, 2006). Foreign investors, who are usually minority shareholders, may believe that independent directors, as opposed to directors who are personally or professionally connected to the firms' managers, are more likely to be objective when monitoring, compensating, and firing managers, as they are less susceptible to self-serving managerial influence (Kim et al., 2005). Controlling owners may not allow foreign investors to place more independent directors on the board, as that may prevent block-holders from continuing to enjoy private benefits.

Domestic institutional investors in Taiwan may be ineffective monitors, from another point of view, it might be due to the influence of Confucianism, the individuals in Taiwan have a very positive attitude toward harmony in groups, avoiding conflict and confrontation. Besides, domestic institutional investors may have no incentive to exercise exit or voice to increase board independence. Compared to foreign and individual investors, domestic institutional investors usually have significant

information advantage. They can exploit other minority shareholders with relative ease if corporate governance is weak.

Therefore, we predict that the degree to which foreign investors are able to influence Taiwanese companies depends on the interaction between new and existing institutions. When ownership is concentrated, or manager influence is strong, or shareholding of domestic institutional is high, Taiwanese companies are better able to resist the influence of foreign investors.

Hypothesis 3.1: the higher the level of ownership concentration of a firm, the weaker the relationship between foreign ownership and the level of board independence.

Hypothesis 3.2: the higher the level of ownership concentration of a firm, the weaker the relationship between foreign ownership and the stock market return of the firm.

Hypothesis 4.1: the greater the percentage of a firm's share held by its managers, the weaker the relationship between foreign ownership and the level of board independence.

Hypothesis 4.2: the greater the percentage of a firm's share held by its managers, the weaker the relationship between foreign ownership and the stock market return of the firm.

Hypothesis 5.1: the greater the percentage of a firm's share held by domestic financial institutions, the weaker the relationship between foreign ownership and the level of board independence.

Hypothesis 5.2: the greater the percentage of a firm's share held by domestic financial institutions, the weaker the relationship between foreign ownership and the stock market return of the firm.

Embeddedness in the Industrial Contexts

Sociologists argue that all economic activity is socially grounded and enabled and the setting of corporate governance is not exceptional. The noisiness of a firm's operating environment will affect monitoring costs (Demsetz and Lehn, 1985). Following sociological perspectives, we believe that the impact of foreign ownership differs not

only across firms but also across industries. It is likely that the industrial contexts that a company operates may moderate the influence of foreign ownership on board independence and stock market return. High-growth environments mean greater uncertainties, which require a great amount of subjective decision making of management. Decisions are made on the basis of ex ante predictions, and the outcomes realized ex post may be quite different from the anticipations made earlier (Bathala and Rao, 1995). In such uncertain context, firms may prefer more insiders on their boards. The foregoing discussion suggests that the influence of foreign ownership on board independence and the contribution of foreign ownership to firm's stock market return by increasing the level of board independence become weaker in the high-growth industries.

Hypothesis 6.1: the greater the growth rates of the industry where a firm operates, the weaker the relationship between foreign ownership and the level of board independence.

Hypothesis 6.2: the greater the growth rate of the industry in which a firm operates, the weaker the relationship between foreign ownership and the stock market return of the firm.

The capital structure of an industry may also moderate the relative magnitude of the influence of foreign ownership. Debt is ascribed a significant role in controlling shareholder-management conflicts. Debt forces managers to consume fewer perks and become more efficient in order to lessen the probability of bankruptcy, the loss of control, and loss of reputation (Grossman and Hart, 1982). We assert that the influence of foreign ownership on board independence and the contribution of foreign ownership to firm's stock market return by increasing the level of board independence become stronger in the high-growth industries.

Hypothesis 7.1: the greater the debt ratio of the industry in which a firm operates, the stronger the relationship between foreign ownership and the level of board independence.

Hypothesis 7.2: the greater the debt ratio of the industry in which a firm operates, the stronger the relationship between foreign ownership and the stock market return of the firm.

Finally, the monitoring services of the board become less effective as the firm operates in a highly-concentrated industry. Concentrated industries are composed of powerful companies with the potential to constrain each others' strategic actions (Tirole, 1988). From the managerial discretion perspective (Hambrick and Finkelstein, 1987), managers in concentrated industries might have greater discretion because they have sufficient scale to create strategic options of their own (Finkelstein and Boyd, 1998). Foreign investors may have more incentive to enhance the monitoring function of the board by employing larger numbers of independent directors to ensure insiders will not pursue their interests at the expense of those of outsiders. Thus,

Hypothesis 8.1: the higher the concentration levels of the industry where a firm operates, the stronger the relationship between foreign ownership and the level of board independence.

Hypothesis 8.2: the higher the concentration levels of the industry where a firm operates, the stronger the relationship between foreign ownership and the stock market return of the firm.

3. Data and Methods

Sample

The empirical study is conducted in Taiwan using a sample of 150 companies who are the constituents of the FTSE-Taiwan 50 Index and Mid-Cap 100 Index. These 150 most highly capitalised blue chip companies represent only 20.4% of the public companies

listed on the Taiwan Stock Exchange (TSE) but nearly 90% of the Taiwanese stock market capitalisation, covering the 24 most important industries in Taiwan. The distribution of the sample is summarized in Table 1. The data of board and ownership structure are hand-collected from each company's annual report. We retrieve the listing information for all public companies whose incorporation country is Taiwan from the DataStream Database. Among 1262 Taiwanese companies, 50 are cross-listed overseas. Since 38% of the 50 are included in the sample (see the last two columns of Table 1), it seems that there may not be a serious selection bias. Moreover, these 150 companies are all selected by the FTSE, a world-leader in the creation and management of indices, and their chances of being invested in by foreign investors may be higher. It can be assumed that most foreign investment in the Taiwanese market is attracted to these most capitalised companies.

However, the distribution of sample companies over the 24 industries is not even. For example, there are 56 technology hardware companies but only one food producer. This imbalance may lead to undue influence of industries for which there are many observations because of many unobserved industry specific effects, resulting in an over-estimate of certain industry-level characteristics. According to Kalton (1983), an obtained sample should be only negligibly biased estimates of their population values if the distribution of the values for the variables of interest in the selected sample is close to the distribution of these variables in the entire population or targeted sample. Each company can be weighted by the ratio of the subclass's population proportion (Column B in Appendix 1) to the sample proportion (Column A). The resulting weights of

adjustment (Column C) will be taken into account in the subsequent analysis. What is more, the leading research package for social sciences MLwin 2.0 (see www.cmm.bristol.ac.uk) will be used in this work. It allows users to conduct robustness examinations with Markov Chain Monte Carlo estimation methods to further correct the selection bias (Browne, 2005, p.11).

There is another unbalance data problem to which attention should be paid. It will be impossible to observe 55.63% of the sample companies for the entire nine-year period (i.e. 1998-2006). Here the imbalance is caused by a difference in the time when the company went public, and this imbalance can be partially explained by the independent variables included in this work - firm age, year of Initial Public Offering, profitability, and firm size. In order to correct the imbalance problem, a logistic regression is first built to estimate the effects of these variables on the decision to a dummy indicating whether or not a company can be observed over the nine-year period. Using the inverse cumulative distribution function of the normal distribution, these individual probabilities are translated into the probit scores. Finally, based on these scores, Lee's Lambda (also called Inverse Mill's Ratio) is calculated by using Heckman's formula (see Smits, 2003) and is included into our models as an additional control variable.

<Insert about Here Table 1>

Measures of Variables

The financial data from 1998 to 2007 of each company derives from the Datastream

database and the ownership information is from the BvD ORISIS database. The information of board structure is sourced from the annual reports over a period of 1998-2006. The nine- year- repeated- measure is able to provide reliable information by minimizing the influence of business cycles as well as industry volatility on company performance. The use of secondary data analysis also enables us to collect large amounts of data (1122 firm years) in a short time and specific information (i.e. ownership structure and board structure) that is unavailable in the commercial databases subscribed. Furthermore, since annual reports are written by public accountants with broad experience and audited by specialists outside the company, systematic errors of measure is reduced.

Dependent Variables

-Stock Market Return, which is measured as:

Market return= $\frac{[(\text{Market Price Year End} + \text{Dividend per Share} + \text{Special Dividend})/(\text{Last Year's Market Price}-1)] \times 100}{}$

-Board Independence, which is measured as the proportion of independence directors on the board, i.e. the number of directors who satisfy independent condition divided by the total number of directors of the board.

Independent Variables

-Foreign Ownership. It is measured by the percentage of foreign institutional investors' ownership (see Ahmadjian and Robbins, 2005).

-Firm Level Moderating Factors. These include ownership concentration, measured by the BvD independence indicator (1 for the most dispersed, 8 for the most concentrated, see Bureau van Dijk, 2007, p.15); manager ownership, which refers to the percentage of shareholdings held by senior managers; and financial institution ownership, which refers to the percentage of shareholdings held by domestic financial institutions.

-Industrial Level Moderating Factors. These include industry growth rate, measured by the average increase rate of sales for each industry; industrial debt level, which refers to the average figure of debt-common equity ratio for each industry; and industry concentration level, which is measured by the Hirschman-Herfindahl-Index for each industry.

-Control Variables, which include firm age, measured by the number of years since its incorporation; firm size, measured by the natural log of total assets; the ratio of Return on Asset (ROA), and Lee's Lambda.

Empirical Model

We specify a two-level model with firm-level (Level 1) effects and industry-level (Level 2) effects. The first level equations model the relationship board independence/stock market return and the firm-level factors and correspond to the within-industry variation of dependent variables (see Appendix 1). Two strategies are used as controls for endogeneity. Firstly, given that financial performance and board structure are endogenous to a firm's external environment, this analysis incorporates industrial effects into all regression models. Secondly, a lagged-design will be

employed to address the ‘temporal precedence’ condition and to exclude the ‘alternative explanation of causality’ (Cook and Campbell, 1979). For example, a company’s financial performance in 2006 is explained by its board structure in 2005. We estimate three series of regression models with one-year, two-year and three-year lagged design respectively. Based on the values of adjusted R Square, we find the one-year lagged model is the most an appropriate lagged treatment for endogeneity problem.

Findings

Descriptive Statistics

Figure 1 shows the percentage of foreign ownership over the nine-year period. In general, foreign shareholding in our sample companies increases from less than 2% in 1998 to 24.02% in 2006. Table 2 reports the change of board characteristics. Over time, the average board size slightly reduces from 9.24 in 1998 to 8.79 in 2006 while the average level of board independence increases from 0 in 1998 to 20.52% in 2006. The percentage of companies adopted the separation of CEO from Chairman is largely increased from 16% in 1998 to 24.70% in 2006.

<Insert about Here Figure 1>

<Insert about Here Table 2>

Table 3 shows the mean of each variable and the correlation matrix. Stock market return is highly correlated with industrial level factors (growth rate and debt level) and with firm financial characteristics (firm size and ROA). The level of board independence is

correlated with industrial levels of debt and concentration, firm age and firm size. Foreign ownership has significant correlation with industrial debt level, firm size and ROA. The control variable Lambda is significantly related to many variables.

<Insert about Here Table 3>

Test of Hypotheses

Board Independence

The results of multi-level regressions are summarized in Table 4. Model 0 is the single-level variance component model, which serves as the starting point for the Likelihood Ratio Test (LRT). Model 1 corresponds to the unconditional two-level variance component model. It indicates that the between industry variance is significant (2.609, $p < 0.01$). As Model 1 indicates, about 21.6% of the total residual variation of the level of board independence is due to differences between industries and the rest is caused by firm-level factors. The result of LRT suggests that with the increase of one degree of freedom, the value of -2 Log-Likelihood (i.e. like R^2 in OLS regression, the smaller the value of -2Log-Likelihood, the better the model fits to the data) significantly reduces ($X^2(1)=92.396$, $p < 0.01$).

<Insert about Here Table 4>

Model 2 estimates the effects of firm-level control variables and foreign ownership on the level of board independence, without allowing for the heterogeneity of intercept and the slope of foreign ownership across industries. Next we estimated Model 3, which allows for the heterogeneity in the influence of foreign ownership and intercept.

The between industry variance largely reduced from 2.609 in Model 1 to 0.479 ($p < 0.01$), indicating that a remarkable part of differences between industries is explained by these factors, especially by foreign ownership. Compared to Model 2, Model 3 explains an additional part of the variation ($X^2(3) = 48.152$, $p < 0.01$) and most surprisingly, the coefficient of foreign ownership is significantly negative (-1.171, $p < 0.05$).

Model 4 includes the main effects of firm-level moderating factors. Again, the chi square differences test shows that this model explains an additional part of variation ($X^2(3) = 56.368$, $p < 0.01$). Model 5 considers the interaction between foreign ownership and the three firm-level moderators. Model 6 includes the main effects of industry-level moderators and explains an additional part of variation ($X^2(3) = 57.78$, $p < 0.01$). Finally, Model 7 takes account of all independent and control variables, which has better fit to the data, as its value of -2 Log-Likelihood is the lowest and the reduction of value is significant. About 27.52% of the total residual variation of the level of board independence is due to differences between industries.

In Model 7, we find that the main effect of foreign ownership on the level of board independence is significantly negative (-11.532, $p < 0.01$). The random coefficient of foreign ownership is almost 0 (see the “a*a” row in Table 4), meaning that there is no industry heterogeneity in the way that foreign ownership influences a firm’s level of board independence. Thus, our H1 is rejected. Foreign ownership has a negative association (-1.186, $p < 0.01$) with the level of board independence in the companies with high level of ownership concentration. The influence of foreign ownership is

weaker in concentrated companies (i.e. the sum of coefficients of “a” and “a*b” is smaller than the coefficient of “a”), which is consistent with our expectation (H31). Furthermore, the positive influence of foreign ownership on the level of board independence is much stronger in concentrated industries (20.134, $p < 0.01$), which is in support of our H81 (i.e. the sum of coefficients of “a” and “a*g” is larger than the coefficient of “a”). We notice that in Model 5 and Model 6 where the interaction between foreign ownership and the three industry-level moderators are not included, the effect of the interaction between foreign ownership and the level of ownership concentration is insignificant. It became significant in Model 7. This finding suggests that foreign ownership has an effect on the level of board independence in the firms with low level of ownership concentration is contingent upon the industry concentration level. Similarly, the absence of a significant main effect of foreign ownership in Model 5 and 6 indicates that the influence of foreigners is conditional on the degree of industry concentration. At mean level of industry concentration (0.134, which means there is no monopolistic competition within the industry), foreigners are unable or unwilling to exert influence on the level of board independence. This further supports our argument that the impact of foreign ownership differs not only across firms but also across industries.

In Model 7, we also find that the coefficient of Lee’s Lambda is significant in all models, suggesting that the effect of the unbalanced data problem in the sample is well captured in our models. Firm age is positively (0.028, $p < 0.01$) while firm size (-0.208, $p < 0.01$) is negatively related to the level of board independence. These findings are in

support of the arguments in the literature of organization studies.

Finally, one major limitation of the use of the secondary data deserves emphasis. As we shall be constrained by the availability of information contained in the annual reports, we can use only one item as a proxy for each variable. The single item may just scratch the surface of each concept, cause measurement errors and diminish the validity of our findings. This shortcoming can be compensated for by using the multi-level modelling approach, which allows for the specification of measurement errors in the model. We re-estimate Model 7 using the Markov Chain Monte Carlo (MCMC) module in MLWin, which allows for simulation of different measurement error values (see Rasbash et al., 2005, p.154). We first use the MCMC Gibbs sampling while setting the measurement error of foreign ownership at 0.05. We obtain the same coefficients as with the Iterative Generalized Least Square method used for Model 7. Then we estimate a new model using the MCMC Metropolis Hastings method. The associations remain the same as those in Model 7. Thus, we conclude that measurement error is not really concern for our findings.

Stock Market Return

We first estimate the single-level variance component model and the unconditional two-level variance component model. The result of the second model indicates that the between industry variance is almost zero and the intra-class correlation is less than 1%. With the increase of one degree of freedom, the difference of the value of -2Log-Likelihood between the first and the second model is insignificant. Therefore,

the use of multi-level analysis is unnecessary. We decide to use the ordinary least squares linear regression to test the hypotheses regarding stock market return. The results of regression are summarized in Table 5.

<Insert about Here Table 5>

Model 1 estimates the main effects of foreign ownership and control variables. Whereas the coefficient of foreign ownership is insignificant, firm size has significantly negative impact on a firm's stock market return. Model 2 includes the three firm-level moderating factors but none of them has significant effect. Model 3 takes the interaction between foreign ownership and the three firm-level moderators into account. Supporting our H42, the interacting effect between foreign ownership and manager ownership is negative and significant (-0.1534 , $p < 0.05$), and in presence of this interaction, the main effect of management ownership on stock market return becomes positive and significant (0.16 , $p < 0.01$). Compared to Model 1, the value of adjusted R Square increases 38.78% (i.e. $(0.068 - 0.049) / 0.049 = 0.3878$), meaning that this model explains an additional part of variation. Model 4 includes the three industry-level moderating factors. The negative interacting effect between foreign ownership and manager ownership remains significant.

Model 5 includes all explanatory variables. The significantly negative interacting effect between foreign ownership and manager ownership (-0.4069 , $p < 0.05$) supports our H42: the influence of foreign ownership becomes weaker when managers hold more shareholdings (i.e. the sum of coefficients of "a" and "a*c" is smaller than the coefficient of "a"). Similarly, our H62 cannot be rejected, as the interacting effect

between foreign ownership and industrial growth rate is significantly negative (-0.1757 , $p < 0.01$) and the sum of coefficients of “a” and “a*e” is smaller than the coefficient of “a”. After including the interaction between foreign ownership and industrial growth rate into Model 5, the significant main effect of management ownership is enlarged from 0.16 to 0.42 while the interacting effect of foreign ownership and management ownership becomes more negative (from -0.1729 to -0.4069). These changes suggest that for the firm operating in the fast-growing industries, manager owning part of the firm create more value for shareholders. However, the presence of foreign ownership in these companies might reduce manager ownership and consequently worsen the firm’s stock market performance.

Unexpectedly, a firm’s level of board independence is negatively associated with its stock market return. The negative coefficient of firm size means that Taiwanese investors favour large firm. They also reward the firms whose managers have part of ownership. We will discuss these findings in the following section.

Discussion

Since the liberation of Taiwan’s financial market in the late 1990s, two divergent business systems come into direct contact and conflict as foreign institutional investors invested in Taiwan. This article addresses the influence of this contact and examines the possible change on the Taiwanese system of corporate governance. In doing so, it begins with the premise that foreign investors (especially those from the US and UK) care primarily about the return on their investment in financial market. When they

invest in Taiwan's stakeholder capitalism system, their interests clash with those of existing shareholders and provided they have the mechanisms to do so, foreign investors try to increase the level of board independence in order to enhance the monitoring on insiders and maximize their value.

However, the results of our empirical study show that, instead of increasing, foreign ownership decreases the level of board independence. This phenomenon must be linked to an outstanding institutional feature of East Asian capitalism—the high level of ownership concentration. Like in many countries in this region, the weak state enforcement of property rights in Taiwan is the most probable cause of the concentrated ownership, as entrepreneurs often confront weak legal systems, poor law enforcement, and corruption (Sheng, 2001; Tang, 2001; Clarke, 1998; La Porta et al., 1997, 1998). Without relying on the state, entrepreneurs and institutional block-holders must obtain the power (through high voting rights) and the incentives (through high cash flow rights) to negotiate and enforce corporate contracts with various stakeholders. The nature of a corporation's ownership structure will affect the nature of the agency problems not only between managers and shareholders but also among shareholders (Claessens and Fan, 2003). In the corporations of liberal market economies, whose ownerships are diffuse, agency problems normally stem from the conflicts of interest between outside shareholders and managers who own an insignificant amount of equity in the firm (Jensen and Meckling, 1976). But in Taiwan, where corporate ownership is concentrated to a degree that one owner has effective control of the firm, the nature of the agency problem shifts away from manager-shareholder conflicts to conflicts

between the controlling owner and minority shareholders (Claessens and Fan, 2003).

In Taiwan's weak property-rights environment, powerful insiders with private information may even trade on information before it is disclosed to the public. Especially, good performing companies may have stronger incentive to remain opaque and poorly governed because controlling owners can derive profits from rent seeking (see Fan and Wong, 2002). For minority foreign shareholders, although they are entitled to the cash flow rights, they face high uncertainty that the block-holders could opportunistically deprive minorities of their rights, extract wealth from the firm, receive the entire benefit, but only bear a fraction of the cost through a lower valuation of his cash-flow ownership. In any situation with rent seeking and relationship-based transactions, foreign investors may prefer to let controlling owner continue to protect their rents and disclosing all information may negatively affected their own values (Claessens and Fan, 2003). For the foreign investors who acquire a controlling stake in a domestic firm, they may have the same incentive as other insiders to exploit minority shareholders. Therefore, foreign investors in Taiwan may be unwilling to tackle poor corporate governance by placing more independent directors on the board, as that would prevent controlling owners from enjoying information asymmetries and from depriving minority shareholders of their rights, attracting financial markets, social and other sanctions.

Moreover, in Taiwan where hostile takeovers are rare and friendly negotiation is a customary way of doing business, foreign investors might tend to have personal ties with controlling owners. The equity holdings from monitoring may not generate

sufficient motivation for foreign shareholders to press for more efficient behaviour on the part of management. Rather, they might find it in their interest to cooperate with other larger insiders to gain private benefits at the expense of small shareholders (see Ananchotikul, 2006). Indeed, the result of Model 7 documents the evidence on the private benefits of foreign investors. Foreign ownership has more negative effect on the level of board independence when it involves in the companies with concentrated ownership structure. However, it does not mean that foreign investors completely abandon the monitoring of insiders. Our study shows that in the firms operating in the high-concentrated industries, where managers might have greater discretion and the net benefits of extra monitoring by minority shareholders increase, foreign investor's motivation to enhance control is stronger and thus, the effect of foreign ownership on the level of board independence becomes strongly positive.

Furthermore, the negative effect of a firm's level of board independence on its stock market return is puzzling because it suggests the less independent a firm's board is, the better performance in stock market it has. This is different to the findings in prior studies conducted in the West. However, closer consideration in Taiwan's institutional contexts shows that this may not be so surprising. The stewardship theory is helpful to explain why Taiwan's investors reward the companies with lower level of board independence.

The stewardship theory originates from organizational psychology and organizational sociology. Different to the agency theory in economics literature that assume self-interested actors rationally maximize their own personal economic gain,

the stewardship theory conceives people as being motivated by a need to achieve, to gain intrinsic satisfaction through successfully performing inherently challenging work, to exercise responsibility and authority, and thereby to gain recognition from peers and bosses (Herzberg, Mausner, and Snyderman, 1959; McClelland, 1970). Thus, managers essentially want to do the good jobs and to be the good stewards of the corporate assets. There is no inherent, general problem between executives and shareholders. Instead, the success of the organization is closely related to personal satisfactions. According to Davis et al. (1997), a steward's behaviour can be considered organizationally centred-- a steward who successfully improves the performance of the organization generally satisfies most groups and a steward can also realize the trade-off between his/her personal needs and the organizational objectives. Like stewards, managers in loosely coupled, heterogeneous organizations are motivated to make decisions that they perceive are in the best interests of the group.

As the stewardship theory stands in contrast to the views of human behaviour held under neo-classic economics theories, it postulates that there is an alignment of interests of equity holders and managers; the motivation of a steward-like manager is ordered such that "pro-organizational, collectivistic behaviours have higher utility than individualistic, self-serving behaviours" (Davis et al., 1997). The theory then states that control mechanisms of the sorts outlined in agency theory, for example, strong monitoring with independent board director, will inhibit the motivation of a steward and be counter-productive in terms of the best interests of the equity holders. Instead, the organizational environment should be designed to be high commitment or

involvement-oriented (Tosi et al., 2003). Therefore, stewardship theorists believe that a company's performance variation arises from whether the structural situation facilitates effective actions of the managers (Donaldson et al., 1991). The board structure should assist board directors and managers to attain superior performance by their corporations.

Prior studies suggest that the stewardship theory may be more appropriate in the collectivism culture context where people subordinate their personal goals to the goals of their organization and prefer to establish long-term relations that depends on domestic and professional networks into which an individual is embedded (Davis et al., 1997; Hofstede, 1991; Triandis, 1993). This is the case in Taiwan whose major population is Chinese Han and whose culture consists of a sense of order, vertical and horizontal relationships, obligations to the group, and a preference for harmony and cooperation in interpersonal relationships (Gao, Handley-Schachler, and Morrison, 2003). The array of collectivist social-mechanisms reduces individual and organizational goal incongruities and leads to a strong sense of community. Managers in Taiwan may have strong commitment to their company and well align their interests with those of their principals (Vernard and Tian, 2007). Consequently, managers with a high level of motivation and identification require less supervision and low level of board independence means trust and empowering, which increase risk tolerance with the organization, foster a living, breathing and ever-evolving company culture, encouraging managers to venture out of their comfort zones and to create higher value for shareholders (Davis et al., 1997). Therefore, in Taiwan's particular institutional

context, lower level of board independence increases a firm's stock market return.

When the foreign investors from individualism culture invest in Taiwan, conflicts may occur. Foreign investors may essentially suspect the motivation of management, feeling uncomfortable about the increases of executive power. They might directly copy various western governance mechanisms to Taiwan. However, strong monitoring in Taiwan may alienate managers from shareholders, reduce managers' deep commitments to the company, and as a result, they will experience frustrated promotional aspirations, possess greater employment mobility and consequently damage the firm's financial performance (Vernard and Tian, 2007; Davis et al., 1997). Indeed, our study finds that foreign ownership in the companies with high proportion of management ownership worsens stock market return. This problem becomes more severe in a firm operating in high-growth industries.

Finally, the stewardship theory can also help us understand the negative effect of the interaction between foreign ownership and industrial growth rate on stock market return. Firms operating in high-growth industries may require smaller board with more executive directors to quickly adapt to the fast-changing business environment. That is because, a majority of executive directors provides the depth of experience, technical expertise and ease of communication needed for effective board functioning while a majority of outside directors who are not familiar with the company's situation will result in inferior company performance (Muth and Donaldson, 1998). Hence, from the perspective of stewardship theory, control mechanisms usually advocated by foreign investors may have less or counter effects on financial performance in Taiwan. When

foreign investors invest in the firms operating in high-growth industries, their performance in stock market return becomes worse.

It is important to note that the generalization of our findings must consider the following limits. Firstly, much of the cross-sectional variation in stock market return is idiosyncratic, as the adjusted R-square of our regression models do not exceed 0.10. Secondly, our study merely focuses on the highly-capitalised, large companies in Taiwan. Our findings may not be applicable to those small and middle-sized enterprises. Finally, our research model is empirically tested only by a sample in Taiwan. There is a need to reevaluate the findings to determine whether such knowledge holds true in other coordinate market countries that have experienced an increase of foreign investors.

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Appendix 1:

For Firm i operating in Industry j :

$$\begin{aligned}
 (1) \text{BoardIndependence}_{ij} = & \beta_{0j} + \beta_{1j} * \text{ForeignOwnership}_{ij} + \beta_{2j} * \text{OwnershipConcentration}_{ij} \\
 & + \beta_{3j} * \text{ManagerOwnership}_{ij} + \beta_{4j} * \text{FinancialInstitute}_{ij} + \beta_{5j} * \text{FirmAge}_{ij} \\
 & + \beta_{6j} * \text{FirmSize}_{ij} + \beta_{7j} * \text{LAMBDA}_{ij} + \beta_{8j} * \text{ROA}_{ij} \\
 & + \beta_{9j} * \text{ForeignOwnership}_{ij} * \text{OwnershipConcentration}_{ij} \\
 & + \beta_{10j} * \text{ForeignOwnership}_{ij} * \text{ManagerOwnership}_{ij} \\
 & + \beta_{11j} * \text{ForeignOwnership}_{ij} * \text{FinancialInstitute}_{ij} + \varepsilon_{ij}
 \end{aligned}$$

Where, β_{0j} = average level of board independence for all the firms operating in Industry j

β_{ij} = average impact of independent variables at Level 1

ε_{ij} = error term at Level 1

At Level 2 we model the intercept and coefficient of foreign ownership as varying across industries;

$$(2) \beta_{0j} = \gamma_{00} + \gamma_{01} * \text{IndustryGrowth}_{ij} + \gamma_{02} * \text{IndustryDebt}_{ij} + \gamma_{03} * \text{IndustryConcentration}_{ij} + \mu_{0j}$$

$$\begin{aligned}
 (3) \beta_{1j} = & \gamma_{10} + \gamma_{11} * \text{IndustryGrowth}_{ij} + \gamma_{12} * \text{IndustryDebt}_{ij} \\
 & + \gamma_{13} * \text{IndustryConcentration}_{ij} + \mu_{1j}
 \end{aligned}$$

Where, γ_{00} and γ_{10} = the intercept

γ_{ij} = average impact of independent variables at Level 2

μ_{0j} and μ_{1j} = error term at Level 2

By substituting (2) and (3) into (1), we get the general expression representing the conditional model (i.e. the covariance model) in Equation 4:

$$\begin{aligned}
 (4) \text{BoardIndependence}_{ij} = & \gamma_{00} + \gamma_{01} * \text{IndustryGrowth}_{ij} + \gamma_{02} * \text{IndustryDebt}_{ij} \\
 & + \gamma_{03} * \text{IndustryConcentration}_{ij} + \gamma_{10} * \text{ForeignOwnership}_{ij}
 \end{aligned}$$

$$\begin{aligned}
& +\gamma_{11}*\text{IndustryGrowth}_{ij}*\text{ForeignOwnership}_{ij} \\
& +\gamma_{12}*\text{IndustryDebt}_{ij}*\text{ForeignOwnership}_{ij} \\
& +\gamma_{13}*\text{IndustryConcentration}_{ij}*\text{ForeignOwnership}_{ij} \\
& +\beta_{2j}*\text{OwnershipConcentration}_{ij}+\beta_{3j}*\text{ManagerOwnership}_{ij} \\
& +\beta_{4j}*\text{FinancialInstitute}_{ij}+\beta_{5j}*\text{FirmAge}+\beta_{6j}*\text{FirmSize}_{ij} \\
& +\beta_{7j}*\text{LAMBDA}+\beta_{8j}*\text{ROA}_{ij}+\beta_{9j}*\text{ForeignOwnership}_{ij}*\text{OwnershipConcentration}_{ij} \\
& +\beta_{10j}*\text{ForeignOwnership}_{ij}*\text{ManagerOwnership}_{ij} \\
& +\beta_{11j}*\text{ForeignOwnership}_{ij}*\text{FinancialInstitute}_{ij}+\mu_{0j} \\
& +\mu_{1j}*\text{ForeignOwnership}_{ij}+\varepsilon_{ij}
\end{aligned}$$

In the same way, we can model the general equation for the association between stock market return and the factors at both firm and industry level.

$$\begin{aligned}
(5) \quad \text{StockMarketReturn}_{ij} = & \gamma_{00} + \gamma_{01}*\text{IndustryGrowth}_{ij} + \gamma_{02}*\text{IndustryDebt}_{ij} \\
& +\gamma_{03}*\text{IndustryConcentration}_{ij} + \gamma_{10}*\text{ForeignOwnership}_{ij} \\
& +\gamma_{11}*\text{IndustryGrowth}_{ij}*\text{ForeignOwnership}_{ij} + \gamma_{12}*\text{IndustryDebt}_{ij}*\text{ForeignOwnership}_{ij} \\
& +\gamma_{13}*\text{IndustryConcentration}_{ij}*\text{ForeignOwnership}_{ij} + \beta_{2j}*\text{BoardIndependence} + \beta_{3j} \\
& \text{OwnershipConcentration}_{ij} + \beta_{4j}*\text{ManagerOwnership}_{ij} \\
& +\beta_{5j}*\text{FinancialInstitute}_{ij} + \beta_{6j}*\text{FirmAge} + \beta_{7j}*\text{FirmSize}_{ij} \\
& +\beta_{8j}*\text{LAMBDA} + \beta_{9j}*\text{ROA}_{ij} + \beta_{10j}*\text{ForeignOwnership}_{ij}*\text{OwnershipConcentration}_{ij} \\
& +\beta_{11j}*\text{ForeignOwnership}_{ij}*\text{ManagerOwnership}_{ij} \\
& +\beta_{12j}*\text{ForeignOwnership}_{ij}*\text{FinancialInstitute}_{ij} + \mu_{0j} + \mu_{1j}*\text{ForeignOwnership}_{ij} + \varepsilon_{ij}
\end{aligned}$$

Table 1 : Distribution of Sample

Industry	Number of Firms	Number of Firm Year (observation)	% within Sample (A)	Industry % of Public Firms (B)	Weight (C=B/A)	Number of Cross-listing Firms	% of Cross-listing firms
Automobiles & Parts	3	34	2.0%	2.5%	1.25		-
Banks	4	35	2.7%	1.5%	0.56		-
Chemicals	8	69	5.3%	5.7%	1.08		-
Construction & Materials	5	33	3.3%	4%	1.21	1	50%
Electronic, Electrical Equip.	17	118	11.3%	15.9%	1.41	3	75%
Fixed Line Telecommunications	1	102	0.7%	0.1%	0.14		-
Food & Drug Retailers	1	7	0.7%	0.1%	0.14		-
Food Producers	1	7	0.7%	2.5%	3.57		0
Gas, Water & Multi-utilities	1	9	0.7%	0.4%	0.57		-
General Financial	12	9	8.0%	3%	0.38	1	20%
General Industrials	1	9	0.7%	0.7%	1.00		-
Household Goods	2	7	1.3%	3.7%	2.85		0
Industrial Engineering	4	6	2.7%	4.3%	1.59		-
Industrial Metals	4	51	2.7%	3.5%	1.30	1	50%
Industrial Transportation	12	64	8.0%	2.2%	0.28	1	50%
Leisure Goods	3	17	2.0%	2.3%	1.15		-
Mobile Telecommunications	1	8	0.7%	0.3%	0.43		0
Oil & Gas Producers	2	13	1.3%	0.1%	0.08		-
Oil Equipment & Services	1	7	0.7%	0.1%	0.14		-
Personal Goods	6	35	4.0%	8.4%	2.10		0
Real Estate	2	26	1.3%	3.3%	2.54		-
Support Services	1	9	0.7%	0.8%	1.14		-
Technology Hardware & Equip.	56	432	37.3%	24.6%	0.66	12	42.86%
Travel & Leisure	2	15	1.3%	1.1%	0.85	□	-
Total	150	1122	100.0	91.1%		19	

Table 2: the Change of the Board Structure

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Average Board Size (No. Directors)	9.24	8.67	8.32	8.47	8.67	8.69	8.69	8.83	8.79
Average Level of Board Independence	0	0	20%	13.19 %	16.10 %	20.14 %	22.13 %	25.56 %	20.52 %
CEO-Chairman Duality	84.00 %	83.30 %	84.30 %	85% %	78.70 %	79.60 %	80.50 %	81.50 %	75.30 %
CEO-Chairman Separated	16.00 %	16.70 %	15.70 %	15.00 %	21.30 %	20.40 %	19.50 %	18.50 %	24.70 %

Table 3 Means of Variable and the Correlation Matrix

	Mean	1	2	3	4	5	6	7	8	9	10	11	12	13
Market Return in Year T (1)	23.20%													
Market Return in Year T+1 (2)	26.57%	0.991(**)												
Board Independenc e (3)	15%	0.027	-0.02											
Foreign Ownership (4)	0.18%	-0.048	-0.122**	-0.006										
Ownership Concentratio n (5)	7.25	-0.047	-0.042	-0.007	0.039									
Manager Ownership (6)	0.27%	0.047	0.047	-0.007	-0.038	-0.018								

Financial Institute Ownership (7)		0.05%	-0.029	-0.066	0.013	-0.047	0.027	-0.038							
Industrial Growth (8)		0.22	.098(**)	0.009	-0.018	-0.059	0.041	.057(*)	0.035						
Industrial Debt (9)		100.71%	-0.077(*)	-0.090(*)	0.134(**)	-0.131(**)	-0.050(*)	-0.004	0.069(*)	-0.196(**)					
Industrial Concentration (10)		0.134	-0.023	-0.046	-0.136(**)	-0.054	-0.374(**)	0.002	0.014	-0.104(**)	-0.044				
Firm (11)	Age	22.64 year	-0.012	0.005	-0.204(**)	-0.004	0.011	-0.021	0.077(*)	-0.112(**)	-0.207(**)	0.126(**)			
Firm (12)	Size	160224371.22 (TW\$)	-0.218(**)	-0.213(**)	-0.059(*)	0.209(**)	0.090(**)	-0.011	0.238(**)	-0.078(**)	0.162(**)	-0.034	-0.032		
ROA (13)		8.2451	0.131(**)	0.151(**)	0.022	0.150(**)	-0.098(**)	-0.021	-0.032	0.024	-0.122(**)	0.021	0.008	-0.246(**)	
Lamba (14)		1.034	-0.055	-0.059	0.210(**)	-0.034	-0.0252(**)	-0.004	-0.061(*)	-0.0107(**)	0.362(**)	0.109(**)	-0.273(**)	-0.024	-0.031

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

Table 4: Results of Multi-level Regression (Dependent Variable: the Level of Board Independence)

Model	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intercept	7.358**	7.022**	6.660**	7.284**	6.034**	4.880**	7.239**	8.320**
Firm Age			0.046**	0.024**	0.027**	0.022**	0.032**	0.028**
Firm Size			-0.065	-0.07	-0.106	-0.044	-0.243**	-0.208**
ROA			-0.002	-0.013	-0.009	-0.009	-0.02	0.0000
Lambda			1.008*	0.989**	1.099**	1.068**	0.729**	0.660**
Foreign Ownership (a)			-1.601*	-1.171*	-1.579*	-2.244	-1.446	-11.532**
Ownership Concentration (b)					-0.249**	-0.259*	-0.251**	-0.111
Manager Ownership (c)					-0.073	-0.022	-0.005	-0.027
Institute Ownership (d)					-0.094	-1.73	-0.163	-0.211
a*b						-0.082	-0.259	-1.186**
a*c						-0.719	-0.419	-0.136
a*d						7.886	-3.333	-5.786
Industrial Growth (e)							0.420	0.577
Industrial Debt (f)							0.009**	0.007**
Industrial Concentration(g)							0.292	-2.560*
a*e								-1.512
a*f								-0.012
a*g								20.134**
Explained Variance:								
Between Industry		2.609**		0.479**	0.569**	3.115**	1.092**	2.528**
Intercept*a				3.389**	3.401**	0.000001	4.482**	0.000001
a*a				13.17**	12.346**	0.000001	13.592**	0.000001
Between Firm	11.146**	9.469**	9.228**	7.836**	7.686**	7.581**	7.061**	6.659**
Intra-class correlation		0.216013		0.057607	0.068928	0.29123	0.133938	0.275171
-2Log-likelihood	4309.379	4216.983	2611.012	2562.86	2506.492	2504.974	2447.194	2437.927

Chi Square Difference Test	$X^2(1)=92.396^{**}$	$X^2(3)=48.152^{**}$	$X^2(3)=56.368^{**}$	$X^2(3)=1.518$	$X^2(3)=57.78^{**}$	$X^2(3)=9.267^*$
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** Coefficient is significant at the 0.01 level.

* Coefficient is significant at the 0.05 level.

Table 5: Results of OLS Linear Regression (Dependent Variable: Stock Market Return in Year t+1)

Model	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	178.551**	241.646**	257.438**	259.996**	173.345**
Board Independence	-0.04077	-0.0285	-0.02848	-0.02072	-0.1168*
Firm Age	-0.0357	-0.0412	-0.03261	-0.05545	-0.02839
Firm Size	-0.2453**	-0.2349**	-0.2348**	-0.2256**	-0.1432**
ROA	-0.05283	-0.06285	-0.05965	-0.07076	-0.02733
Lambda	-0.06038	-0.09387	-0.08403	-0.07562	-0.02849
Foreign Ownership (a)	-0.03289	-0.02348	-0.31515	-0.31746	-0.16233
Ownership Concentration (b)		-0.06658	-0.1220	-0.11426	-0.05067
Manager Ownership (c)		0.073979	0.16**	0.1602**	0.4192*
Institute Ownership (d)		-0.03227	-0.0508	-0.0503	-0.06665
a*b			0.29877	0.273315	0.276881
a*c			-0.1534*	-0.1729**	-0.4069*
a*d			0.04172	0.065324	0.042065
Industrial Growth (e)				-0.1023**	0.085994
Industrial Debt (f)				-0.1078	0.041615
Industrial Concentration(g)				0.022049	-0.04831
a*e					-0.1757*
a*f					-0.1321
a*g					0.09573
F-Test Value	4.058**	3.391**	3.317**	3.176**	2.036**
Adjusted R ²	0.049	0.055	0.068	0.078	0.034

** Coefficient is significant at the 0.01 level.

● Coefficient is significant at the 0.05 level.

Figure 1 Percentage of Foreign Ownership in a Given Year, 1998-2006

