THE PROPORTION OF INDEPENDENT DIRECTORS AND STOCKHOLDERS' WEALTH

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ABSTRACT

The main issue of this study is to explore the relationship between the proportion of independent directors and stockholders' wealth. The empirical results indicate that the positive effects of independent directors on stockholders' wealth are significantly smaller for firms appointing independent directors compulsorily by regulations than those for firms appointing independent directors voluntarily. Furthermore, owing to the different needs as related to the seats held by independent directors for each firm, the effects of independent directors for firms with less severe agency problems are limited. Thus, under the circumstances that firms have to appoint independent directors compulsorily by regulations, the effects of independent directors on stockholders' wealth will be smaller for firms with less severe agency problems than those for firms with severe agency problems. Firms appointing independent directors compulsorily by regulations result in less benefits than those of firms appointing independent directors voluntarily. To force firms to maintain independent directors will cause much fewer benefits especially when firms are not in need of appointing independent directors.

Keywords：corporate governance, independent directors, stockholders' wealth

Ⅰ. INTRODUCTION

Corporate governance have received heightened attention in recent years, following the events of Enron in the U.S.A., and the impact of the financial and managerial scandals of Rocomp Informatics Ltd. and Infodisc Technology Co. Ltd. in Taiwan. To strengthen corporate governance in Taiwan, the government has implemented a number of reforms. One of the reforms is the introduction of a system of independent directors and supervisors. Investors hope that independent directors and supervisors will take the protection of shareholders' rights and interests as their ultimate goal. On the contrary, many companies doubt the function of independent directors and supervisors. Therefore, the authorities and enterprises reach a stalemate as regards the proportion of the board composed of independent directors. This situation triggered our motivation to examine whether maintaining a certain proportion of independent

directors[1] will be the best way to maximize shareholders' wealth.

We can see the importance of corporate governance from the inclusion of two indicators regarding competitive ability in the periodically issued reports by International Management Development: "the directors of corporations can supervise the management effectively" and "stockholders' wealth can be managed effectively". The basic regulatory model of a corporation in Taiwan is a two-tier structure that consists of a board of directors, supervisor(s) and shareholders. The function of the directors is to be involved in management practices, whereas the supervisors are responsible for scrutinizing the decisions made by directors, reviewing and auditing company reports and resolving disputes between shareholders and directors. The two-tire structure cannot avoid the flaws in corporate governance. In order to improve the quality of corporate governance, the Taiwan Stock Exchange Corporation (TSEC) began requiring that IPO firms listing from February 2002 should have two independent directors and one independent supervisor. Only when investors are protected by sound regulations and laws, can they trust the authorities and hence promote the sound development of the capital market and the financial system. (La Porta, et al., 1997)[2]

The primary duty of a firm's directors and supervisors is to monitor the managers on behalf of shareholders, which may reduce the agency problems (Fama and Jensen, 1983; Fama, 1980; Williamson, 1983). On the contrary, the agency problems will be more severe when the functions of directors and supervisors are ineffective, firm performance and stock price will then be affected accordingly (Core, et al., 1999). The maintenance of independent directorship is one of the most important determinants as regards corporate governance, and has been discussed by scholars and enterprisers extensively (Brickley, et al., 1994; Core, et al., 1999; Rosenstein and Wyatt, 1990; Weisbach, 1988).[3] The results with regard to whether inside or independent directors and supervisors will bring more benefits to a company are mixed. Many researchers have argued that independent directors may well perform their duty of monitoring,

hence will bring more benefits to a company (Rosenstein and Wyatt, 1990; Weisbach, 1988) For example, Weisbach (1988) finds that a CEO of a poorly performing firm is more likely to be replaced if the firm has a majority of outside directors. However, some studies do not find a significant correlation between the proportion of independent directors and firm performance (Baysinger and Butler, 1985; Bhagat and Black, 1997; Hermalin and Weisbach, 1991; Yermack, 1996).

Yet, it does not mean there is no need to maintain inside directors. Some suggest that inside directors' expert knowledge is necessary for a company (Rosenstein and Wyatt, 1997), and the inclusion of inside directors on the board can lead to a more effective decision-making process (Fama and Jensen, 1983). Furthermore, inside directors are often concurrently shareholders, the higher their stock ownership of the firm, the greater the alignment of firm performance and directors' benefits, hence the greater incentive for such inside directors to monitor firm operations.[4] Mace (1986) and West (1985) report that the most effective boards are those that have a "balance" of inside and outside directors. Lin (2001) find that the higher the proportion of control stockholders serving as directors or supervisors, the higher the degree of the firm's involvement in the stock market is and the lower the firm's value will be. The empirical results of Lu (2004) and Luo (2004) indicate that, compared to inside directors, independent directors or supervisors can independently perform their functions and raise firm performance. Furthermore, Liao (2004) argues that the appointment of independent directors helped improve firm performance. There is no uniform solution as regards how many seats held by independent directors will be enough for a company. For example, in East Asia, Singapore began requiring that from 2001 at least one-third of directors should be independent. Mainland China began requiring that IPO firms listing from 2002 should have at least two independent directors and one independent supervisor.[5] Taiwan Stock Exchange Corporation (TSEC) began requiring that IPO firms listing from February 2002 should have two independent directors and one independent supervisor and have once proposed to raise the ratio of independent

directors and independent supervisors to one-forth because of the accounting and managerial scandal in 2004 involving Rocomp Informatics Ltd.[6] It is difficult to find an optimal proportion of independent directors. This empirical research only attempts to examine the effects of independent directors on stockholders' wealth by proposing the following three hypotheses: (1) whether independent directors have a positive effect on stockholders' wealth (2) compared to those for firms appointing independent directors voluntarily, the positive effects of independent directors on stockholders' wealth will be smaller for firms appointing independent directors compulsorily by regulations, and (3) under the circumstances that firms have to appoint independent directors compulsorily by regulations, the effects of independent directors on stockholders' wealth will be smaller for firms with less severe agency problems than those for firms with more severe agency problems. This empirical research differs from previous studies in that not only are the effects of independent directors on stockholders' wealth examined, but also the reasons for proposing the mixed results found in studies related to the effects of independent directors on firm performance are investigated. We can further explore the factors that impair the functions of independent directors. In other words, the research has certain contributions to the literature with regard to corporate governance.

The main contribution of this empirical study is that the results suggest that firms appointing independent directors compulsorily by regulations result in less benefits than those firms appointing independent directors voluntarily. To force firms to maintain independent directors will cause much fewer benefits, especially when firms are not in need of appointing independent directors. The maintenance of independent directors would be perfunctory and would be even harmful to stockholders when the authority insisted on the maintenance of independent directors without any balance mechanisms. The remainder of this paper is organized into four sections. Section II develops the hypotheses. Section III describes the sample selection, empirical design and variable descriptions. Section IV shows the empirical results. A summary and conclusion is provided in Section V.

Ⅱ. RESEARCH HYPOTHESES

The results with regard to whether inside or independent directors will bring more benefits to a company are mixed. From the perspective of the influence of board composition on CEO compensation, many studies indicate that there is a significant correlation between a CEO's compensation and board structure. For example, Lambert, et al. (1993) and Boyd (1994) document a positive relation between CEO compensation and the percentage of the seats held by independent directors, since independent directors can not only supervise managers objectively and independently but also reduce a CEO's excessive compensation. But, the monitoring function will be impaired when the maintenance of independent directorship is just perfunctory (e.g. independent directors who are appointed by the CEO). Core, et al. (1999) find that the higher the percentage of the board composed of inside directors, the more advantages to the company. Crystal (1991) argues that boards of directors are ineffective in setting appropriate levels of compensation because independent directors are essentially hired by the CEO and can be removed by the CEO. As such, board members may be unwilling to take positions adversarial to the CEO, especially concerning the CEO's compensation. Moreover, boards usually rely on the compensation consultants hired by the CEO, and this may lead to compensation contracts that have not been optimized for the firm.

From the perspective of the relationship between board composition and firm performance, many researchers have argued that independent directors may well perform their duty of monitoring, and hence will bring more benefits to the company (Rosenstein and Wyatt, 1990; Weisbach, 1988). For example, Weisbach (1988) finds that a CEO of a poorly performing firm is more likely to be replaced if the firm has a majority of independent directors. However, there are many studies that find no evidence of the relationship between the proportion of independent directors and firm performance (Baysinger and Butler, 1985; Bhagat and Black, 1997; Hermalin and Weisbach, 1991; Yermack, 1996).

The basic regulatory model of a corporation in Taiwan is a two-tier structure that consists of a Board of directors, supervisor(s) and shareholders. Shareholders, as owners of the corporation, elect directors and supervisor(s) at shareholders' meeting. The board, which holds discretionary power owing to the delegation of shareholders, also performs the functions of management. Shareholders retain the power to reshuffle the director who abuses delegated discretion to protect their own interests. Supervisors monitor the improprieties of directors and also audit the managerial execution of business activities.[7] Furthermore, the TSEC began requiring that IPO firms listing from February 2002 should have two independent directors and one independent supervisor. According to Article 17 of the "Supplementary Provisions to the Taiwan Stock Exchange Corporation Criteria for Review of Securities Listings" issued by TSEC, the term "the board of directors or supervisors cannot independently perform their functions" shall mean the occurrence of any of the following circumstances:[8]

The Board of directors is responsible for business execution in Taiwan whereas independent directors carry the duty of supervision on the behalf of stockholders to protect stockholders' benefits. It is common in Taiwan that firms have controlling stockholders who are not only involved in business execution but also control the board. Therefore, the role of being independent in the board of directors is quite important in that independent directors may perform the duty of supervision on both the managers and other directors more objectively (Tu, et al., 2002). Lin (2001) finds that the higher the proportion of control stockholders that serve as directors or supervisors, the higher the degree of the firm's involvement in the stock market is and the lower the firm's value will be. The empirical results of Lu (2004) and Luo (2004) indicate that compared to inside directors, independent directors or supervisors can independently perform their functions and raise firm performance. Furthermore, Liao (2004) argues that the appointment of independent directors helped to improve firm performance. We suppose that the agency costs will be smaller and stockholders' wealth will be greater

when the independent directors carry out the function of supervising effectively on the behalf of stockholders. To enhance the function of corporate governance, for example, Taiwan Semiconductor Manufacturing Company (TSMC) appointed well respected experts as its outside directors and paid out a high level of compensation every year.[9] Therefore, we firstly test whether independent directors have a positive effect on stockholders' wealth and propose the hypothesis as follows:

H1：The proportion of independent directors on the board is associated positively with stockholders' wealth.

However, the main purpose of this research is to make a further examination of the consequences resulting from the regulations issued by TSEC that IPO firms listing from February 2002 should have two independent directors and one independent supervisor. The intention to force firms to maintain a certain proportion of independent directors is fine, however the maintenance of independent directors would be perfunctory when firms appoint them reluctantly. Only when a firm realizes the importance of corporate governance and appoints independent directors voluntarily, can independent directors better fulfill supervisory functions. Many researchers argued that independent directors may well perform their duty of monitoring, hence bringing more benefits to a company. For example, Rosenstein and Wyatt (1990) find that outside directors may influence stockholders' wealth and that there is a positive correlation between outside directors and stock price. On the contrary, Yermack (1996) does not find a significant correlation between the proportion of independent directors and firm performance. Baysinger and Butler (1985) do not find a significant correlation between the attributes of board composition and firm performance either. Our research argues that the motivation of the maintenance of independence directors results in the mixed evidence proposed by previous studies. Compared to firms appointing independent directors forced by the regulations set by SEC, appointing independent directors voluntarily, as in the case of TSMC, is supposed to be more meaningful. The following hypothesis is thus developed:

H2 Compared to those firms appointing independent directors voluntarily, the effects of independent directors on stockholders' wealth will be smaller for firms appointing independent directors compulsorily by regulations, ceteris paribus.

The aforementioned hypothesis indicates that the intention for firms to appoint independent directors voluntarily is for the benefits of the firms, thus such directors are supposed to carry the monitoring function effectively. On the other hand, the maintenance of independent directors would be perfunctory when firms are forced by compulsory regulations. We should pay attention that the aforementioned hypothesis is not against the benefits of those that would result from the appointment of independent directors. That is, the independent directors are still important if they can enhance stockholders' wealth though they are appointed by regulation. Core, et al. (1999) found that CEOs influence the decision making of their compensation through their effects on outside directors which did not support the argument that outside directors perform their duty of monitoring better than inside directors do. One of the reasons why independent directors have no effects on firm performance might be that the firm's corporate governance structure is in the optimal state. Therefore, the firm has no need to appoint independent directors. The main duties of independent directors include selection and supervision of managers, supervision of the result of operations of the company, and supervision and handling of the risks encountered by the company, and hence the alleviation of agency problems. It is necessary to maintain independent directors when a firm's agency problems are severe. In other words, the existence of independent directors is a sheer necessity for firms which are in need of appointing such directors. However, under the circumstances that firms have to appoint independent directors compulsorily by regulations, the extent of monitoring performed by independent directors will be smaller for firms with less severe agency problems than those for firms with more severe agency problems. Therefore, we develop the third hypothesis as follows:

H3: Under the circumstances that firms have to appoint independent directors compulsorily by regulations, the effects of independent directors on stockholders' wealth will be smaller for firms with less severe agency problems than those for firms with more severe agency problems, ceteris paribus.

Ⅲ. EMPIRICAL DESIGN

Financial data were collected from the financial files of companies listed in the Taiwan Economic Journal (TEJ). We collected data from 2002 to 2003 related to board composition, ownership structure, and CEO's compensation from the annual report issued by the Market Observation Post System of TSEC. We eliminated companies in the financial and insurance industries because of their special nature. To be included in the research sample, a firm must have disclosed the relevant data in 2002 or 2003. Any firm with that did not provide data was eliminated.[10] As a result, there were 875 samples in our research.

3.1 Regression model

We apply OLS regression to test the hypotheses in this study. The regression model is as follows:

$$RETURN_{it} = \beta_0 + \beta_1 [INDE_{it}] + \beta_2 [INDE_{it} \times AFTER2002_i]$$
$$+ \beta_3 [INDE_{it} \times AFTER2002_i \times AGENCY_{it}]$$
$$+ \beta_4 [SALES_{it}]$$
$$+ \beta_5 [MB_{it}] + \beta_6 [DEBT_{it}] + \beta_7 [INDUSTRY_i]$$
$$+ \beta_8 [YEAR_t] + \varepsilon_{it}$$

where β_2 is used to test H1 and β_3 is used to test H2. The descriptions of related variables are stated as follows:

3.2 Independent variables

Stockholders' Wealth. Since the main issue of this study is to examine the effects of independent directors on stockholders' wealth, percentage of stock return for the current year ($RETURN_{it}$) and percentage of stock return for the following year ($RETURN_{it+1}$) are used to measure stockholders' wealth.

Proportion of independent directors and supervisors (INDE). Seats held by independent directors and independent supervisors[11] Seats held by all directors and supervisors.

Appointment of independent directors and independent supervisors forced by regulations (AFTER2002). Since TSEC began requiring that IPO firms listing from February 2002 should have two independent directors and one independent supervisor, the appointment of independent director and independent supervisor for firms listing from 2002 are forced by regulations, whereas those appointments for firms listing before 2002 are voluntary. The dummy variable AFTER2002 = 1 denotes firms listing from February 2002, after the announcement of related regulations, AFTER2002 = 0, otherwise.

The firm's agency problem (*AGENCY*) We follow the study of Core, et al. (1999) that CEO's excess compensation is as a proxy for agency costs.[12] Determining a CEO's compensation is one of the board's main duties and many empirical studies indicate that a CEO's compensation is related to both board composition and ownership structure. In this study four variables of board composition and ownership structure are used as proxies for the firm's agency problems which result from a CEO's excess compensation: dual Chair/CEO（1 = CEO is concurrently serving as chairman of the board; otherwise = 0), board size, stock ownership of all directors and supervisors, and CEO's ownership. Furthermore, we use AGENCY as a dummy variable. (1 = The firm's agency problems of the sample are smaller than the median of the sample, otherwise = 0)

3.3 Control variables

The research of Core, et al. (1999) examines the effect of CEO's excess compensation on firm performance (i.e., stock return and return on assets). They found a negative association between CEO's excess compensation and firm performance. That is, the higher the agency costs the lower the firm's performance. We follow the control variables used in the study of Core, et al. (1999). We also control for industry and year in this study. Thus, there are five control variables in this study and these are presented as follows:

Firm size (SALES). We proxy for firm size with net sales and use the logarithm of net sales *(SALES)* as a control variable. We expect that the larger the firm size, the higher the stock return.

Investment opportunities (MB). We proxy for investment opportunity sets with the firm's market-to-book ratio. We expect that the higher the investment opportunity, the higher the stock return.

Firm risk (DEPB). The relevant proxy for firm risk is the firm's debt ratio. We expect that the higher the firm risk, the higher the stock return requested by stockholders.

Industry (INDUSTRY). INDUSTRY equals 1 if the firm is in the electronic industry, and 0 otherwise.

Year (YEAR). YEAR equals 1 if 2003, and 0 if 2002.

Ⅳ. EMPIRICAL RESULTS

4.1 Descriptive statistics

As shown in Table 1, the number of samples in years 2002 and 2003 are 329 and 486, respectively. When arranged by the listing date, 147 companies were listed from 1981 to 1990; 545 companies were listed from 1991 to 2000; 65 companies were listed from 2001 to 2002, and 58 companies were listed from February 2002 to December 2002, (7.12 % of the total sample). The study does not include companies listed after December 2002 because they did not contain data for the whole calendar year.

Descriptive statistics of the variables of the sample are presented in Table 2. As shown, the average stock return for the current year ($RETURN_{it}$) and that for the following year ($RETURN_{it+1}$) are about 24.63% and 14.28%, respectively. The average proportion of independent directors and supervisors (INDE) is about 3.76%. There are about 7.12% of firms listed from February 2002 (AFTER2002). As for a firm's agency problem (AGENCY), about 52.34% of the firm's agency problems are smaller than the median of the sample. In other words, 52.34% of the excess compensation received by CEOs is smaller than the median of the sample. The average of the log of net sales (SALES) is 22.0819. The average investment opportunities (MB) and debt ratio (DEBT) are 1.33 and 42.87%, respectively; and 42.24% of the sample companies are TSEC-listed electronic companies (INDUSTRY). 2003's (YEAR) sample accounts for 55.04%.

Table 1　Sample Description

Distribution of the sample			Distribution of the sample: time of listing			
Year	2002	2003	Total	1981-1990	1991-2000	2001–Feb., 2002	Feb., 2002-Dec., 2002
N	329	486	815	147	545	65	58
	40%	60%	%	18.04%	66.87%	7.98%	7.12%

Table 2　Descriptive Statistics

Variable	Mean	Std. Dev.	Min.	Median	Max.
$RETURN_{it}$	0.2463	0.6965	-0.86	0.1289	6.50
$RETURN_{it+1}$	0.1428	0.4945	-0.92	0.0889	6.50
INDE	0.0376	0.0976	0	0	0.5
AFTER2002	0.0713	0.26	0	0	1
AGENCY	0.5234	0.4997	0	1	1
SALES	22.0819	1.4138	16.22	21.9720	26.52
MB	1.3256	0.8834	0.10	1.0945	7.14
DEBT	0.4287	0.4942	0	0	1
INDUSTRY	0.4224	0.4942	0	0	1
YEAR	0.5520	0.4976	0	1	1

$RETURN_{it}$:The percentage of stock return .for the current year.
$RETURN_{it+1}$:The percentage of stock return .for the following year.
INDE:Proportion of independent directors and supervisors.
AFTER2002:＝1 denotes firms listing from 2002, after related regulations have been announced;＝0, otherwise.
AGENCY:1 ＝The firm's agency problems of the sample is smaller than the median of the sample;
　　　＝0, otherwise.
SALES:Firm size; log of net sales.
MB:Investment opportunities; market-to-book ratio.
DEBT:Firm risk; total liabilities/ total assets.
INDUSTRY:Industry indicator = 1 if the firm is in the electronic industry, = 0, otherwise.
YEAR:Year indicator: 2003=1, 2002=0.

Table 3　Pearson (Spearman) Correlation Coefficient Matrix

	$RETURN_{it}$	$RETURN_{it+1}$	INDE	AFTER2002	AGENCY	SALES	MB	DEBT	INDUSTRY	YEAR
$RETURN_{it}$		0.089***	0.041	-0.032	-0.034	0.068**	0.152***	0.076**	-0.235***	0.118***
$RETURN_{it+1}$	0.036		-0.102	-0.160***	0.007	0.015	-0.186***	0.021	-0.221***	-0.359***
INDE	0.064*	-0.146		0.419***	0.020	0.005	0.171***	-0.051	0.246***	0.153***
AFTER2002	-0.040	-0.205***	0.393***		0.129***	-0.047	0.267***	-0.027	0.243***	0.251***
AGENCY	0.006	0.009	-0.012	0.120***		-0.114***	0.144***	-0.101***	0.079**	-0.011
SALES	0.120***	0.063*	-0.024	-0.054	-0.120***		0.217***	-0.007	0.165***	-0.026
MB	0.132***	-0.281***	0.217	0.251***	0.124***	0.238***		-0.186***	0.309***	0.166***
DEBT	0.000	-0.039	-0.040	-0.016	-0.061*	0.080**	-0.155***		-0.173***	-0.006
INDUSTRY	-0.288***	-0.277***	0.238***	0.243***	0.046	0.135***	0.381***	-0.164***		0.052
YEAR	0.255***	-0.397***	0.142***	0.251***	0.003	-0.016	0.223***	-0.002	0.052	

Pearson correlations show on above diagonal and Spearman on below diagonal.

Figures in parentheses are *p*-value; ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

The results of correlation analysis (Pearson correlations) are presented in Table 3. Pearson correlations are show above the diagonal and Spearman below. It shows that correlations among variables are highly related in both Pearson and Spearman correlations. Therefore, a further test of multicollinearity is needed in the following multivariate analysis.

4.2 Analysis of OLS regression

The results of OLS regression are presented in Table 4. Since the problems of heteroskedasticity generally occur in regression analysis, we substitute White-adjusted

t-statistic (White, 1980) for *t*-statistic hereafter, and make related inferences accordingly.

Table 4 presents the results of the regression analysis. When the dependent variable is the percentage of stock return for the current year ($RETURN_{it}$), a 1% increase in the proportion of independent directors and supervisors (INDE) translates into a 1.033% increase in stock return for the current year, and this is statistically significant. Independent directors and supervisors can actually increase stockholders' wealth. Hence the H1 is supported. However, owning to the appointments of

independent directors and supervisors being forced by regulations for those firms listing from 2002, we expect that the effect of independent directors and supervisors on stockholders' wealth will reduce for such firms. The coefficient on INDE×AFTER2002 is negative and is statically significant, which supports H2. Compared to those firms listed before 2002, a 1% increase in the proportion of independent directors and supervisors of firms listed from 2002 results in a 0.888% decrease in stock return for the current year. In other words, when all firms with severe agency problems (i.e. AGENCY=0, firms which are in need of appointing independent directors and supervisors), a 1% increase in the proportion of independent directors and supervisors (INDE) results in a 1.033% increase in the current year's stock return for those firms appointing independent directors and supervisors voluntarily, whereas a 1% increase in the proportion of independent directors and supervisors (INDE) results in only a 0.145% (1.033%−0.888%) increase in current year's stock return for those firms appointing independent directors and supervisors compulsorily. The evidence supports our argument that independent directors are just perfunctory if a firm does not appoint them wholeheartedly. Only when a firm realizes the importance of corporate governance and appoints independent directors voluntarily, can independent directors fulfill a better supervisory function.

Furthermore, for those appointments of independent directors and supervisors which are forced by regulations for firms listing from 2002, we expect that the effects of independent directors and supervisors on stockholders' wealth will be smaller for firms with less severe agency problems. The coefficient on INDE×AFTER2002×AGENCY exhibits a negative and significant association with stock return for the current year. The evidence supports H3 that, compared to those firms in need of maintaining independent directors, the effects of independent directors on stockholders' wealth for firms which are not in need of maintaining independent directors will be smaller, under the circumstances of regulation requirements. We can further see from the coefficients that compared to those firms in need of maintaining independent directors, the effects of

a 1% increase on the percentage of independent directors on stock return for the current year reduces from 0.145% to -1.06% (0.145%−1.205%) for firms which are not in need of maintaining independent directors. In other words, independent directors are significantly negatively associated with return on stockholders' equity under the circumstances.

Similarly, when the percentage of stock return for the following year (RETURN$_{it+1}$) is used as the dependent variable, the hypotheses are still supported by the evidence. As shown, the coefficient of the proportion of independent directors and supervisors (INDE) is significantly higher than zero, the coefficient of INDE×AFTER2002 is significantly negative, and the coefficient of INDE×AFTER2002×AGENCY is also significantly negative. Hence, the evidence supports H1 and H2 once again. The adjusted R-squared of this regression model ranges from 14% to 17%. The maximum of the VIF is 2.306. Obviously, there is no significant problem of multicollinearity and the inferences in this study will not be influenced (Kennedy, 1992).

The above evidence indicates that the effects of the maintenance of independent directors compulsorily by regulation on stockholders' wealth is positive, whereas the effect of independent directors on stockholders' wealth for firms which are not in need for maintaining independent directors will be negative. The boards of firms with less severe agency problems have already functioned effectively from the perspective of corporate governance. However, such boards would function ineffectively or the independent directors would even lead the boards to make worse decisions due to their less expert knowledge compared to other directors.

These results may explain the mixed evidence from related literature examination about the effects of independent directors on firm performance. Independent directors may not function well when firms maintain independent directors compulsorily by regulations or when firms do not have the need to maintain independent directors. Therefore, some studies did not find a significantly positive correlation between outside directors and firm performance.

Table 4　Regression Analyses

Independent variable	β	Sign	Dependent variable		VIF
			RETURN$_{it}$	RETURN$_{it+1}$	
Constant	β$_0$	−	-0.889 (0.007)***	-0.257 (0.163)	
INDE	β$_1$	+	1.033 (0.000)***	0.697 (0.002)***	1.604
INDE × AFTER2002	β$_2$	−	-0.888 (0.045)**	-0.637 (0049)**	2.306
INDE × AFTER2002 × AGENCY	β$_3$	−	-1.205 (0.040)**	-0.878 (0.053)*	1.730
SALES	β$_4$	+	0.039 (0.009)***	0.025 (0.016)**	1.078
MB	β$_5$	+	0.177 (0.000)***	0.034 (0.041)**	1.220
DEBT	β$_6$	+	0.331 (0.008)***	0.266 (0.006)***	1.070
INDUSTRY	β$_7$	?	-0.448 (0.000)***	-0.195 (0.000)***	1.196
YEAR	β$_8$	?	0.140 (0.001)***	-0.286 (0.000)***	1.064
Adjusted R^2			13.9%	16.5%	

Figures in parentheses are *p*-value; ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. White-adjusted *t*-statistics are substituted for *t*-statistics in this study, and related inferences are made accordingly.

Table 5　Regression Analysis—2003' Sample Only

Independent variable	β	Sign	Dependent variable		VIF
			RETURN$_{it}$	RETURN$_{it+1}$	
Constant	β$_0$	−	-0.195 (0.307)	-0.525 (0.016)**	
INDE	β$_1$	+	0.653 (0.013)**	0.127 (0.0276)**	1.923
INDE × AFTER2002	β$_2$	−	-1.184 (0.005)***	-0.014 (0.482)	2.548
INDE × AFTER2002 × AGENCY	β$_3$	−	-0.916 (0.053)*	-0.791 (0.021)**	1.741
SALES	β$_4$	+	0.006 (0.337)	0.028 (0.006)***	1.089
MB	β$_5$	+	0.239 (0.000)***	0.000 (0.449)	1.211
DEBT	β$_6$	?	0.299 (0.024)**	0.121 (0.121)	1.067
INDUSTRY	β$_7$	?	-0.196 (0.000)***	-0.311 (0.000)***	1.270
Adjusted R^2			14.7%	19.4%	

Figures in parentheses are *p*-value; ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. White-adjusted *t*-statistics are substituted for *t*-statistics in this study, and related inferences are made accordingly.

4.3 Sensitivity Analysis

Since the regulations related to the compulsory maintenance of independent directors were announced in February 2002, the maintenance of independent directors for firms listing from 2002 onwards became obligatory. Samples in this study include the fiscal years 2002 or 2003 after trading on TSEC. Firms which listed in 2002 or in 2003 will not have data for a whole fiscal year for their year of listing; hence the first complete fiscal year for firms which listed in 2002 will be 2003. Firms which listed in 2003 are not included in our sample. One may argue that the sample from 2002 contributes to

the supporting of the hypotheses. Therefore, we use the sample from 2003 only to rerun the regressions in order to determine the robustness of the results.

As shown in Table 5, the results are similar to those in Table 4 when the percentage of stock return for the current year (RETURNit) is used as the dependent variable. However, when the percentage of stock return for the following year (RETURNit+1) is used as the dependent variable, the coefficient of INDE×AFTER2002 is negative but insignificant. The coefficient of INDE×AFTER 2002×AGENCY is still significantly smaller than zero.

Hence, H3 is supported. The evidence supports our argument that it will be harmful to force firms which are not in need of appointing independent directors to maintain such directors.

In order to confirm that the result is not influenced by outliers, we follow the suggestion made by Belsley, Kuh, and Welsch (1980) to eliminate outliers that DFFITS is larger than $2\sqrt{p/n}$. The results of the regression without the outlier are still consistent with those of the total sample. Hence, the results of the study are robust[13].

Ⅴ. CONCLUSIONS

The purpose of maintaining independent directors is the hope that independent directors can monitor the management objectively and independently and hence have an effect of diversion on inside directors. Therefore, TSEC began requiring that IPO firms listing from February 2002 should have two independent directors and one independent supervisor. To force firms which already have reached the optimal governance structure will cause adverse effects though the original intention is good.

This study uses TSEC-listed companies of 2002 and 2003 to examine the effects of independent directors on firm performance. The evidence indicates that the proportion of independent directors is significantly positive related to firm performance, whereas the magnitude of the effects of independent directors on firm performance reduces under the circumstances that firms are forced to maintain independent directors by regulations. Furthermore, under the regulation requirements, the effects of independent directors on stockholders' wealth for firms which are not in need for maintaining independent directors will be even smaller. As a consequence, the effects of independent directors will probably decrease instead of increase firm performance.

Our conclusion is that to force listing firms to maintain a certain number of independent directors will not be beneficial to all firms. When the maintenance of independent directors is perfunctory, it would be harmful to firm performance. In Taiwan, the number of outside directors is insufficient. That is, the demand is greater than supply with regard to outside directors and the

equilibrium of outside directors' compensation will rise accordingly. Hence, appointing independent directors with limited talent or even without talent by paying out high compensation may not result in better firm performance. It is important for the government to provide some other policies to enhance the function of independent directors and to increase the supply of independent directors to avoid decreasing the significant value of the appointment of independent directors.

NOTE

1. Following prior studies in Taiwan, the board is composed of directors and supervisors.

2. La Porta, et al. (1997) examined legal rules covering protection of corporate shareholders and creditors, the origin of these rules, and the quality of their enforcement in 49 countries. The results show that countries with poor investor protection have smaller and narrower capital markets. Their findings apply to both equity and debt markets. Compared to common-law countries, French-civil-law countries have the weakest investor protections and the least development capital markets.

3. For example, professor Ye, Y. H. argued that the floor of independent director should be regulated by ratio instead of by number of seats held by outside directors (See Economic Daily, August 13, 2004).

4. Hence, many studies have focused on the relationship between monitoring function results from stock ownership and firm performance (Jensen and Meckling, 1976; Jensen and Ruback, 1983).

5. See Ye, Y. H., Li, C. X. and Ko, C. E., 2002. Corporate Governance and Rating System, pp. 42-45. Taipei: Sunbright Ltd. Co.

6. The authority required that at least two independent directors are needed to be maintained by a company, owing to the enterprises having an opposition to a larger number of independent directors being appointed (See Economic Daily, August 13, 2004).

7. See "Corporate Governance in Taiwan", amended by Securities and Futures Institute in December 2002.

8. 1. Any of the following conditions during the year to date on the part of persons acting as an independent director or independent supervisor of the company applying for listing that compromise their independence:

   (1) Being an employee of the company applying for listing or a director, supervisor, or employee of an affiliated enterprise of the applicant company, except where the position of independent director or supervisor in the applicant company is held concurrently by the independent director or independent supervisor of its parent company or subsidiary.

   (2) Directly or indirectly holding 1% or more of the total outstanding shares of the applicant company, or being one of the top ten natural person shareholders of the applicant company.

   (3) Being a spouse or direct relation within the second degree of kinship of any of the persons in the preceding two subparagraphs.

   (4) Being a director, supervisor, or employee of a juridical person shareholder that directly holds 5% or more of the total outstanding shares of the applicant company or being a director, supervisor, or employee of one of the top five juridical person shareholders.

   (5) Being a director, supervisor, manager, or shareholder holding 5% or more of the shares of a specific company or institution that has financial or operational interactions with the applicant company.

   (6) Being a professional, an independent contributor, a partner, or a company, or an executive director, partner, director, or manager of an institutional consortium or the spouse of same that provides financial, business, or legal or consulting services to the applicant company or an affiliated enterprise of same.

   (7) Concurrently serving as an independent director or independent supervisor for a combined total of five or more other enterprises.

   2. Where a person serving as independent director or independent supervisor of the applicant company has less than five years of the work experience required for the commercial, financial, legal, or corporate operations areas.

   3. Where a person serving as independent director or independent supervisor of the applicant company has failed to receive training of three [course] hours per year to acquire professional knowledge in the areas of law, finance, or accounting and obtain relevant certification documents issued from any of the continuing education systems under (i), (ii), and (iv) of 3.(4) of the Exemplification of Directions Governing Implementation of Continuing Education for Directors and Supervisors of Listed and OTC Companies.

9. The role (outside) directors play in the corporate governance system is also an important issue that needs to be studied. For example, Dowers (1997) states that the effectiveness of corporate governance can be accomplished by the mechanism of a board of directors and compensation.

10. In 2003, the Securities and Future Bureau, Financial Supervisory Commission Executive Yuan, R.O.C. required that a TSEC/GTSM listed company shall disclose the chairman's compensation and CEO's compensation separately. Many companies disclosed the compensation as one total amount in 2002, hence such companies are eliminated from the research sample.

11. Independent directors and independent supervisors are those who fit the definition regulated by TSEC.

12. See Core, et al. (1999) for computation.

13. Large values of DFFITS indicate influential observations. A general cut off to consider is 2; a size-adjusted cut off recommended by Belsley, Kuh, and Welsch is $2\sqrt{p/n}$, where n is the number of observations used to fit the model and p is the number of parameters in the model. Hence, one observation is eliminated due to its DFFITS being bigger than 0.2028 ($2\sqrt{9/875}$).
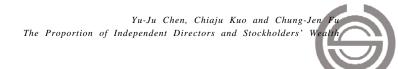
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獨立董事席位比例和股東財富

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摘　　要

本研究主要在探討獨立董事席位比例和股東財富的關係。本文實證發現，相較於自願聘任獨立董事的公司，在受到法令強制聘任獨立董事的公司，其獨立董事為公司股東所帶來的財富顯著較低，此外，每個公司對獨立董事席位的需求不一定一樣，在代理問題輕的公司，獨立董事所能發揮的功能有限，因此在受到台灣法令限制必須設立二位獨立董事和一位獨立監察人的公司，當其代理問題小時，獨立董事為公司股東帶來的財富比代理問題大的公司來得少。也就是，強制規定公司設立獨立董事時對公司股東帶來的財富並不如公司自願性聘任獨立董事的公司高，尤其在公司並沒有聘任的需求時，強制制聘任獨立董事對公司股東帶來的財富更少。

關鍵詞：公司治理、獨立董事、股東財富