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# Corporate Governance and Earnings Management in Expectation of Future Performance: Evidence from Taiwan

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## Abstract

**This study examines whether managers have incentive to manipulate current earnings in Expectation of future performance. In addition, the paper investigates the relation between corporate governance mechanisms and this earnings management behavior. Using Taiwan's listed companies from 1996 to 2001 as our sample, we find that managers use income-increasing discretionary accruals to borrow from future earnings when current performance is relatively bad and expected future performance is relatively good. Conversely, managers use income-decreasing discretionary accruals to save from current earnings for a good future when current performance is relatively good and expected future performance is relatively bad. In addition, our evidence indicates that both greater board independence and larger external blockholder ownership can effectively inhibit managers from income-increasing earnings management behavior. However, they are unable to restrain managers' income-decreasing earnings manipulation behavior. We also find that discretionary accruals are significantly and positively related to outside director shareholding ratio. This holds for managers' both income-increasing and income-decreasing incentives, indicating that companies with greater outside directors shareholding ratio have a tendency to have good current period performance as a result of outside directors' concern for the value of their own stocks. Finally, this study does not find any evidence that institutional shareholding is effective in monitoring managers' earnings manipulation behavior.**

**Keywords:** Earnings management; Corporate governance; Board of directors; Ownership structure.

## I. INTRODUCTION

This study examines whether management in an emerging market manipulate earnings according to the relative performance of current and expected future earnings. In addition, we investigate the role of corporate governance mechanisms, such as characteristics of the board of directors and ownership structure, in restraining the earnings management behavior. According to prior research (Schipper 1989; Healy and Wahlen 1999), earnings management refers to managers taking advantage of the discretionary power provided by Generally Accepted Accounting Principle (GAAP) in selecting accounting methods and procedures to influence the reported earnings. [Discretionary power such as selection of inventory methods, estimation of

allowance for bad debts and of pension expenses, change in revenue recognition timing (e.g. recognizing revenue in advance upon credit sales), or manipulation of actual expenditures (e.g. advertising expenditures, R&D expenditures, and maintenance expenses). For detailed discussions of earnings management literature, please refer to Schipper (1989), Healy and Wahlen (1999), Kothari (2001) and other review papers]. In an information asymmetry environment, managers can and often do embellish earnings via discretionary accounting decision according to preset earnings goals (Smith et al., 1994; Ronen and Sadan, 1981). When management window dress earnings for self interest reasons, they issue information that distorts economic reality and causes

stakeholders to be misled in their decision making. Hence, earnings management can be viewed as an agency problem between company insiders (management or controlling shareholders) and outsiders.

After the occurrence of the steady stream of accounting scandals resulting from several prominent companies, such as Enron, Tyco, Worldcom in U.S, the issues on financial reporting quality and corporate governance have received much attention. Much recent research examines the relation between corporate governance and earnings management. Focusing on unsystematic earnings management behavior in the U.S., Klein (2002) finds that the independence of the board of directors and the audit committee are negatively related to the level of earnings manipulation, and Xie et al. (2003) find that the independence, financial background, and experience of members on the board of directors and the audit committee, and their meeting frequency help to restrain earnings management. Park and Shin (2004) use Canadian data to study whether the board of directors effectively monitors managers' earnings management behavior with the incentive to avoid 'losses and earnings .decreases.' They show that while outside directors, as a whole, are not helpful in inhibiting earnings manipulation behavior, directors from financial institutions reduce earnings management, and the board representation of active institutional shareholders reduce it further. Based on the argument that insiders manage earnings to window dress their companies' economic performance and thereby protect their own control benefits, Leuza et al. (2003) examine data from 31 countries and find that the level of earnings management by insiders decreases as the level of investor protection in that country increases. On the other hand, Bushee (1998), Chung et al. (2002) and Koh (2003) focus on the role of institutional investors in monitoring earnings management behavior. Bushee (1998) finds that when the shareholding ratio of institutional investors increase, management is less likely to cut R&D expenditures to meet short-term earnings goal. However, they find that a large proportion of ownership by transient institutional investors significantly increase the probability that managers reduce R&D to reverse an earnings decline. Chung et al. (2002) study the relation between institutional investor shareholding and management's earnings smoothing behavior with expected future earnings performance in mind. Their results also support that institutional shareholding limit managements to employ discretionary accruals to increase or decrease income. Koh (2003) investigates the upward earnings management of Australian companies and finds that high institutional shareholding can alleviate management's shortsighted earnings manipulation behavior.

The above research, based on the U.S. or the countries where public equity markets are well developed similar to the U.S. and U.K., finds that corporate governance mechanisms such as the board of directors

and institutional investors are effective in mitigating myopic aggressive earnings management. Countries in emerging markets, such as Taiwan, are those with weaker investor protection and higher levels of earnings management (Leuza et al., 2003). Specifically, Taiwan's corporate governance is characterized as concentrated ownership, controlling shareholders aggressively involving with managerial activities and affecting the board of directors, and relatively low proportion of institutional investor, etc. (Yeh and Woitke 2005). These are different from those of other countries in a well developed market. Therefore, whether the existing empirical evidence can apply to countries in emerging markets, such as Taiwan, is subject to doubt. In addition, most research on this issue focuses on upward earnings management or unsystematic earnings management, but little is known about the monitoring effect of corporate governance on upward and downward earnings management separately. Therefore, our purpose is to understand the relation between income-increasing vs. income-decreasing earnings management behavior and corporate governance mechanisms, respectively, in a concentrated ownership context different from the U.S and U.K. It is important to consider not only income-increasing discretionary accruals but also income-decreasing ones, because understating current period earnings distorts financial statements and provides potential for overstatements of future earnings, which may cause mistrust by investors in accounting information and further call the credibility of management into question. In addition, since the various governance mechanisms work simultaneously, we investigate these mechanisms concurrently in this research, including characteristics of board of directors and ownership structure.

Using Taiwan's listed firms from 1996 to 2001 as our sample, this study finds that when current period performance is relatively bad, and expected future performance is relatively good, [In this paper, we define 'relatively good' and 'relatively bad' as individual company performance relative to the median performance of firms in the same industry] management make discretionary accruals decisions which borrow from future earnings to increase current period earnings. When current period performance is relatively good and expected future performance is relatively bad, management make discretionary accruals decisions which decrease current period earnings for the future. Moreover, this paper shows that greater board independence and larger external blockholder ownership effectively restrain management's upward earnings manipulation behavior. However, this is ineffective on management's downward earnings manipulation behavior. In addition, outside director shareholding ratio is positively associated with discretionary accruals. This holds for both 'income-increasing' and 'income-decreasing' earnings management incentives, indicating that companies with greater outside directors shareholding ratio have a

tendency to have good current period performance as a result of outside directors' concern for the value of their own stocks. Finally, this paper does not find evidence that the size of the board of directors and institutional shareholding are associated with earnings management behavior.

This paper has the following contributions. First, this investigation adds to the literature on 'the relation between corporate governance and earnings management.' Prior research which examines the association between corporate governance and earnings management rarely disaggregates earnings management into 'income-increasing' and 'income-decreasing' components. This study, similar to Chung et al. (2002), examines the relation between corporate governance and management's earnings smoothing behavior in Expectation of future performance. However, Chung et al. (2002) focuses on the monitoring role of institutional investors only. We extend this paper by considering the simultaneous operation of various governance mechanisms and then including characteristics of the board of directors and ownership structure concurrently. Second, the evidence of this paper has implications for company monitors, such as directors and external blockholders. We find that non-busy outside directors and external blockholders concentrate only on 'upward earnings management' behavior, but neglect the fact that management has incentive for 'downward earnings management'. Understating current-period earnings distorts current and future financial reports. Therefore, our findings indicate that when monitoring the quality of company financial reports, both directions of earnings management should be taken into consideration to ensure the quality of firms' financial report. This is important because once investors or creditors lose confidence in firms' financial statements, the cost of capital for companies increase in the long run, and in turn firm and hence country competitiveness would be harmed. Finally, this paper finds that outside director ownership is positively related to discretionary accruals. This holds when management has either upward or downward earnings management incentives. The finding is consistent with the direction of Taiwan's newly effective regulations regarding independent directors, which deem large independent director ownership as hurtful towards these directors' independence. [In Article 17 of Supplementary Taiwan Stock Exchange (TSE) Listing Rules, the conditions for 'violation of independence' include 'directly or indirectly hold at least one percent of the Company's outstanding shares, nor is one of the top ten non-institutional shareholders of the Company' or 'is not a director, supervisor, or employee of a legal entity which directly or indirectly owns more than 5% of the Company's issued shares; nor a director, supervisor, or employee of the top five legal entities which are owners of the Company's issued shares.'] In addition, the corporate governance environment in Taiwan is similar to that of

many countries in emerging markets. Therefore, this research provides evidence which can serve as reference to those countries with similar corporate governance environment.

The remainder of this paper is organized as follows. Section two presents the literature review and hypotheses development. Section three provides the research method, including sample selection, data source, research model and its variables. Section four exhibits the data analyses. Section five concludes the study.

## II. Literature Review and Hypotheses Development

### A. Earnings Management Behavior in Expectation of Future Performance

Due to differences across industries and companies, GAAP provide management with discretion in selecting accounting methods and procedures to present their economic substance. Hence, executives can manage earnings to the level of their desire via discretionary accounting accruals [There are other methods of increasing or decreasing earnings. For example, decreasing R&D expenditures can immediately increase profits. This method also has long-term effect because these expenditures are related to high future profits and cash flow levels (Lev and Sougiannis, 1996). On the other hand, discretionary accruals have little or no influence on cash flows]. Discretionary accruals enable revenues, expenses, profits and losses to transfer to another year. However, these accruals often reverse in the future after a period. Therefore, earnings management generally has very short-term effects. However, from the perspective of management's self interest, selecting specific points of time to embellish earnings may be very important. Chung et al. (2002) point out that although these accruals will reverse in future periods, management still have self interest incentives to make adjustment as to the time period in which to realize profits and thereby camouflage companies' real financial performance.

Fudenberg and Tirole's (1995) analytical model indicate that when managers make discretionary accounting decisions, they take expected future earnings into consideration. They focus on job security as managers' incentive for earnings manipulation. [Fudenberg and Tirole (1995) base their research findings on the following three hypotheses. 1. Managers will obtain non-currency incumbency rents by managing companies. 2. Bad performance cause managers to lose their jobs. 3. Companies place greater weights on current period earnings than on past earnings performance when evaluating manager performance]. That is, when current performance is relatively bad, and expected future performance is relatively good, management has incentive to borrow from future earnings

for the current period. They do so to reduce the possibility of being fired. On the contrary, when expected future performance is relatively bad, management save current period earnings for the future. Their purpose is to reduce the probability of being fired in the future. Therefore, based on their model, DeFond and Park (1997) provide empirical evidence showing that when current period earnings are relatively bad, and expected future earnings are relatively high, managers increase current period discretionary accruals to borrow from future earnings. However, when current period earnings are relatively good and expected future earnings are relatively bad, managers decrease current period discretionary accruals to save current period earnings for the future.

We argue that, aside from pursuing monetary interest such as compensation, managers have strong incentive to maintain their job security, especially so under the increasingly competitive economic environment. The flexibility that GAAP provides in terms of accounting choices enables earnings manipulation as a way to smooth earnings across periods. Therefore, we first predict that managers have incentive to manipulate earnings after considering future earnings performance. We propose hypothesis 1 (H1) and hypothesis 2 (H2), respectively, as follows:

H1: When a company's current period performance is relatively bad and its expected future performance is relatively good, managers have incentive to manage earnings upwards.

H2: When a company's current period performance is relatively good and its expected future performances is relatively bad, managers have incentive to manage earnings downwards.

## **B. The Relation between Corporate Governance Mechanisms and Earnings Management Behavior**

Earnings management behavior conceals companies' true financial performance. It affects the ability of stakeholders to use accounting information in monitoring managers' behavior and in determining firm value and thus is viewed as an agency problem between insiders and outsiders (Xie et al., 2003). However, effective corporate governance mechanisms, such as the board of directors and ownership structure, can reduce agency problems and monitor the self interest behavior of managers (Shleifer and Vishny, 1997).

The board of directors has the responsibility to monitor executives so as to protect shareholders' interest. Although much recent literature focuses on board directors with financial expertise and audit committee members, Beasley (1996) examines financial statement scandals and find that the board of directors, as a whole, plays an aggressive monitoring role in the financial reporting process. Taiwan's regulatory agencies do not

require companies to establish audit committees in the board of directors and disclose the information regarding company board members' education and experiences. Therefore, in this paper, we analyze characteristics of the board of directors such as independence and size. Furthermore, non-executive blockholders also play an important monitoring role. Denis (2001) points out that blockholders own enough shares to provide them with enough authority and incentive to monitor and affect company operations. Hence, the following are testable hypotheses based on Taiwan's environment regarding monitoring mechanisms such as the board of directors, external blockholders, and institutional investors.

### **(a) Board Independence**

According to agency theory, the key functions of board of directors are monitoring and control (Fama and Jensen, 1983; Shleifer and Vishny, 1997). However, whether the board of directors can effectively function depends on its members' relative independence. People generally see independent directors as better monitors and controllers than other directors. This is due to the former having ability to act on behalf of their companies' best interest. In addition, outside directors have incentive to develop their reputation as experts in decision monitoring and control (Fama and Jensen, 1983). Prior research shows that the independence between directors and management are related to the effectiveness of the board of directors' monitoring and control. For example, studies such as Brickley et al. (1994), Byrd and Hickman (1992), and Weisbach (1988) provide evidence that company performance and effective corporate governance increase with the independence of the board of directors (hereafter, board independence). Dechow et al. (1996) and Beasley (1996) investigate financial reporting issues. They demonstrate that the existence of outside directors is negatively related to financial statement scandals. Furthermore, Klein (2002) and Xie et al. (2003) find that board independence is negatively associated with the level of earnings management. Accordingly, we expect that the greater board independence, the greater the inhibition of managers' earnings management behavior with future performance in mind. Hence, hypothesis 3 (H3) and hypothesis 4 (H4) are as follows:

H3: When a company's current period performance is relatively bad and its expected future performance is relatively good, board independence is negatively related to the degree of upward earnings management.

H4: When a company's current period performance is relatively good and its expected future performance is relatively bad, board independence is negatively related to the degree of downward earnings management.

## (b) Board Size

Prior research indicates that small corporate boards are more effective at monitoring than large boards. This is because the smaller size enables better coordination, less communication difficulty and free rider problems (Ahmed et al. 2006). Jensen (1993) and Lipton and Lorsch (1992) argues that the larger the board size, the more difficult for the independent directors to express their views and opinions. This in turn affects the effectiveness of decision control. Jensen (1993) contends that large boards cause ineffective coordination, increase information cost and confuse decision. In this situation, the board of directors may eventually be controlled by a dominant Chief Executive Officer (CEO). Yermack (1996) and Eisenberg et al. (1998) empirically test U.S. and Finland companies. They find that companies with smaller boards have greater market values. Mak and Kusnadi (2005) investigate companies in Singapore and Malaysia. They show that board size is negatively associated with firm performance (proxied by Tobin's Q).

With regards to the relation between board size and the quality of accounting information, Beasley (1996) and Dechow et al. (1996) provide evidence that companies with financial statement scandals have larger boards. In addition, Vafeas (2000) show that firms with small boards of directors have greater returns-earnings relation. Ahmed et al. (2006) finds that board size and the informativeness of accounting earnings (proxied by ERC) are negatively related for New Zealand firms.

In summary, the above literature indicates that smaller boards of directors can operate more effectively. In addition, each director on small boards has greater responsibility for monitoring the quality of company financial statements and disclosures. Therefore, we expect that the smaller the board size, the more board directors fulfill their functions of supervising the quality of financial reports. This in turn inhibits earnings management behavior which conceals firms' real economic performance. Hence, hypotheses 5 and 6 are as follows:

H5: When a company's current period performance is relatively bad and its expected future performance is relatively good, board size is negatively related to the degree of upward earnings management.

H6: When a company's current period performance is relatively good and its expected future performance is relatively bad, board size is negatively related to the degree of downward earnings management.

## (c) Independent Director Shareholding

People generally think that directors with large shareholdings are more likely to question and challenge management's plans (Mace, 1986; Patton and Baker, 1987). Minow and Bingham (1995) show that since

managers' decisions have larger impact on the wealth of directors with large shareholdings, these directors are unlikely to support actions to reduce shareholders' wealth. Prior literature finds that effective monitoring is positively associated with outside director shareholding. For example, Gerety and Lehn (1997) document that accounting scandals are negatively related to outside director shareholding. Beasley (1996) provides evidence that financial reporting scandals and non-executive director shareholding are negatively associated. These findings support Jensen's (1993) argument that the greater the shareholding of outside directors, the greater their incentive to closely monitor managers. This implies that the level of earnings management is negatively associated with outside director shareholding. Therefore, hypotheses 7 and 8 are as follows:

H7: When a company's current period performance is relatively bad and its expected future performance is relatively good, outside director shareholding ratio is negatively related to the degree of upward earnings management.

H8: When a company's current period performance is relatively good and its expected future performance is relatively bad, outside director shareholding ratio is negatively related to the degree of downward earnings management.

## (d) External Blockholder Shareholding

Non-executive's blockholding is related with the effectiveness of corporate governance. Denis (2001) argues that the number of shares that blockholders own provides sufficient power and incentive for monitoring and affecting company operations. Barclay and Holderness (1991) show that companies' having blockholders increases management turnover and improves stock performance. In addition, Shome and Singh (1995) and Allen and Phillips (2000) find that financial performance improves after companies have blockholders. Chtourou et al. (2001) also provide evidence that external blockholders inhibit the level of earnings management. Therefore, we expect that the larger the shareholding ratio of external blockholders, the less the level of managers' income-increasing or income-decreasing earnings management. This is because blockholders have the ability and incentive to collect information and hence monitor and counteract managers. In turn, this restrains managers' earnings manipulation behavior. Hence, hypotheses 9 and 10 are developed as follows:

H9: When a company's current period performance is relatively bad and its expected future performance is relatively good, external blockholder shareholding ratio is negatively related to the degree of upward earnings management.

H10: When a company's current period performance is relatively good and its expected future performance is

relatively bad, external blockholder shareholding ratio is negatively related to the degree of downward earnings management.

### (e) Institutional Investors

Shleifer and Vishny (1997) contend that institutional investors play a key role in a successful corporate governance system. Shleifer and Vishny (1986) and McConnell and Servaes (1990) point out that institutional investors have supervisory functions such as forcing management to place emphasis on corporate economic performance and to avoid self-interest behavior. The greater the institutional investor shareholding, the longer the holding period of these shares. This provides greater incentive for institutional investors to collect and analyze information from a long term perspective, to supervise management, and to encourage increase in company performance (Chung et al., 2002). Bushee (1998) finds that the greater the institutional shareholding, the greater the supervisory effect with respect to managers cutting R&D expenditures to avoid earnings decreases. Similarly, Chung et al. (2002) and Koh (2003) show that high level of institutional investor shareholding has constraining effect on the level that managers make discretionary accruals decisions. Hence, we expect that the higher the institutional investor shareholding ratio, the lower the level of earnings management. Therefore, our hypotheses are as follows.

H11: When a company's current period performance is relatively bad and its expected future performance is relatively good, the institutional investor shareholding is negatively related to the degree of upward earnings management.

H12: When a company's current period performance is relatively good and its expected future performance is relatively bad, the institutional investor shareholding is negatively related to the degree of downward earnings management.

## III. Research Method

### A. Empirical Model and Variable Definition

#### (a) Earnings Management Behavior in Expectation of Future Performance

This study uses model (1) to examine managers' earnings management behavior.

$$DA_i = \alpha_0 + \alpha_1 I(C_p F_g)_i + \alpha_2 I(C_g F_p)_i + \alpha_3 LDA_i + \alpha_4 LEV_i + \alpha_5 VAR_i + \alpha_6 SIZE_i + \sum_{j=1}^5 \theta_j YEAR_j + \sum_{k=1}^{12} \phi_k IND_k + \varepsilon_i \quad (1)$$

where,

$YEAR_j = 1$  for year  $j$ , and 0 otherwise, where  $j=1,2,\dots,5$  (for years 1996 to 2000, respectively);

$IND_k = 1$  for industry  $k$ , and 0 otherwise, where  $k=1,2,\dots,12$ .

The definitions of other variables in model (1) are as follows:

### 1. Dependent Variable: Discretionary Accruals (DA)

This paper uses 'Discretionary Accruals' (DA) that the accounting literature employs capture the level of earnings management. Dechow et al. (1995) argues that the Modified Jones Model has the most explanatory power among numerous discretionary accruals estimation methods. The Modified Jones Model uses time-series data to estimate discretionary accruals numbers. However, Taiwan's history of stocks is short and Taiwan encountered structural changes in its industries (Chang et al., 2001). Therefore, we employ Cross-sectional Modified Jones Model that Subramanyam (1996) and Bartov et al. (2000) advocate to estimate discretionary accruals numbers. That is, we estimate model (2) matching data by year and industry. Specifically, each industry needs to have at least 10 firm observations to estimate discretionary accruals. Therefore, we use the 2-digit industry code based on Taiwan Institute of Economic Research's industry classification (TIERIC) as the standard for industry categorization. This makes sure that there are enough observations for each industry. We employ ordinary least squares (OLS) to estimate coefficients such as  $\hat{a}_1$ ,  $\hat{a}_2$ ,  $\hat{a}_3$  in equation (2) and use them as parameter estimates for non-discretionary accruals in equation (3). The following are models (2) and (3):

$$\frac{TA_{ijt}}{A_{ijt-1}} = a_{1it} \cdot \frac{1}{A_{ijt-1}} + a_{2it} \cdot \frac{(\Delta REV_{ijt} - \Delta REC_{ijt})}{A_{ijt-1}} + a_{3it} \cdot \frac{PPE_{ijt}}{A_{ijt-1}} + \varepsilon_{ijt} \quad (2)$$

$$NDA_{ijt} = \hat{a}_{1it} \cdot \frac{1}{A_{ijt-1}} + \hat{a}_{2it} \cdot \frac{(\Delta REV_{ijt} - \Delta REC_{ijt})}{A_{ijt-1}} + \hat{a}_{3it} \cdot \frac{PPE_{ijt}}{A_{ijt-1}} \quad (3)$$

where,

$i$  = Industry 1...i;

$j$  = Company 1...j in industry j;

$t$  = Sample period;

$TA_t$  = Total accruals, this is calculated as net income from continuing operations minus cash flows from operating activities;

$\Delta REV_t$  = Sales revenue for year  $t$  minus sales revenue for year  $t-1$ ;

$\Delta REC_t$  = Net accounts receivable for year  $t$  minus net accounts receivable for year  $t-1$ ;

$PPE_t$  = Total depreciative assets for year  $t$ , calculated as: the costs of plants and buildings + costs of machines and equipments + costs of other equipments + appreciations in fixed assets revaluation - appreciations in land revaluation;

$A_{t-1}$  = Total assets for year  $t-1$ .

Model (3) estimates non-discretionary accruals (NDA).

We calculate discretionary accruals (DA) as the difference between total accruals (TA) and non-discretionary accruals (NDA). Similar to other researches, this paper assumes that discretionary accruals (DA) can capture the level of earnings management by managers.

## 2. Hypothesized Variables: Incentives for Managers' Earnings Manipulation Behavior

Managers have incentives to keep their jobs, and thus we argue that when current period performance is relatively bad and expected future performance is relatively good, managers will use income-increasing discretionary accruals decision to borrow from future earnings. The purpose of managers is to reduce the possibility of losing their job in the short run. On the other hand, if current period performance is relatively good and expected future performance is relatively bad, managers will make income-decreasing discretionary accruals decisions to save current period earnings for the future. Managers do this to lower the probability of losing their jobs in the future. Specifically, we measure firm performance as cash flows from operating activities. [Company performance should be measured as current reported earnings minus the current discretionary accruals. In order to avoid contemporaneously spurious correlations due to measurement errors for discretionary accruals, this study follows Healy's (1985) argument and uses cash flows from operating activities as the proxy for firm performance (Chung et al., 2002; Chang et al., 2001; Young and Wu, 2003)]. Following Chung (2002), we measure 'relatively good' and 'relatively bad' firm performance by comparing a company's performance with the median performance of companies in the same industry (Chung, 2002). That is, if a company's period  $t$  performance is better than the median performance of firms in the same industry, then we deem the company's current period performance as 'relatively good.' We represent this as  $Cg$ . Conversely, if a company's current period performance is 'relatively bad,' we code this as  $Cb$ . Similarly, if a company's period  $t+1$  performance is better than the median performance of firms in the same industry, we presume the company's expected future performance as 'relatively good'. We express this as  $Fg$ . On the contrary, when a company's expected future performance is 'relatively bad,' we show this as  $Fb$ . [This study follows DeFond and Park (1997) and Chung et al. (2002) to assume that managers can accurately predict future performance and earnings. Therefore, we use ex-post measure to be a surrogate for ex-ante prediction. In other words, we use actual performance of next period to capture current period's prediction for next period performance]. Therefore, when a company's current period performance is 'relatively bad' and expected future performance is 'relatively good,' then  $I(CbFg)=1$ , and 0 otherwise. On the other hand, when a company's current period performance is 'relatively good' and expected future performance is 'relatively bad,' then

$I(CbFb)=1$ , and 0 otherwise.

When current period performance is relatively bad and expected future performance is relatively good ( $I(CbFg)$ ), managers have incentives to use 'income increasing' discretionary accruals. Hence, we expect the coefficient for  $I(CbFg)$ ,  $\alpha_1$ , as  $>0$ . Similarly, when current period performance is relatively good and expected future performance is relatively bad ( $I(CgFb)$ ), managers have incentive to make 'income decreasing' discretionary accounting decisions to reduce current period profits. Therefore, we expect the coefficient for  $I(CgFb)$ ,  $\alpha_2$ , as  $<0$ .

## 3. Other Control Variables

Prior research on earnings management shows that discretionary accruals are also related to other factors. Therefore, this study includes other related control variables in the model. Since accruals have auto-regressive characteristics (Dechow et al. 1995; Dechow et al. 1996), prior period accruals may reverse in the current period. In order to avoid observing earnings smoothing behavior due to the effects of prior period accounting choices, following DeFond and Park (1997), this paper includes prior period discretionary accruals (LDA) as a control variable. Due to the reversal characteristic of LDA, we expect its coefficient to be negative. Watts and Zimmerman (1986) argue that the higher the financial leverage (LEV), the greater the risk of covenant violation. They contend that this gives managers greater incentive to manipulate earnings. However, Park and Shin (2004) state that higher financial leverage also means that companies have higher risk of financial difficulty. This causes creditors to closely monitor these companies and hence reduces the possibility of earnings management (Park and Shin, 2004). Empirical evidence from Taiwan also supports this argument (Chang, 2001; Young and Wu, 2003). Therefore, we include leverage (LEV) as a control variable and expect it to have negative association with earnings management. We calculate financial leverage as total debt divided by total assets.

The larger the firm size, the greater the managers' incentives to manipulate earnings so as to reduce political cost (Watts and Zimmerman, 1986). Hence, we also control for firm size. We measure firm size as the log of total assets [In addition, we also use sales and market value of equity to proxy for firm size in our sensitivity tests. These are measures that prior literature commonly uses. Our results (not shown in this paper) are not sensitive to different firm size measurements] and expect the coefficient to be negative. When the variance of company earnings is large, managers have greater incentives to smooth earnings. Warfield et al. (1995) find that earnings variability is related to the level of discretionary accruals. Therefore, we control for this relation. Earnings smoothing can either be upward or downward earnings management behavior and thus we do not predict a direction for the

relation between earnings variability and discretionary accruals. We measure earnings variability (VAR) as the variance of unexpected earnings for the past five years, in which unexpected earnings is calculated as the difference between current period and prior period earnings.

### (b) The Relation between Characteristics of Board of Directors, Ownership Structure and Earnings Management Behavior

In order to examine whether characteristics of the board of directors and ownership structure can inhibit managers' earnings manipulation behavior, this study uses model (4) as the following to test the relation.

$$DA_i = \beta_0 + \beta_1 I(C_b F_g)_i + \beta_2 I(C_g F_b)_i + \sum_{m=1}^5 \beta_{3m} CG_{im} + \sum_{m=1}^5 \beta_{4m} I(C_b F_g)_{im} \times CG_{im} + \sum_{m=1}^5 \beta_{5m} I(C_g F_b)_{im} \times CG_{im} + \beta_6 LDA_i + \beta_7 LEV_i + \beta_8 VAR_i + \beta_9 SIZE_i + \sum_{j=1}^5 \theta_j YEAR_j + \sum_{k=1}^{12} \phi_k IND_k + \varepsilon_{it} \quad (4)$$

#### 1. Independent Variables: Characteristics of the Board of Directors and Ownership Structure (CG)

We select 5 variables relating to characteristics of the board of directors and ownership structure from prior literature. This enables us to examine the relation between each governance mechanism and earnings management behavior. In turn, we can test whether effective corporate governance mechanism can inhibit managers' earnings manipulation behavior. Specifically, the variables are as follows.

##### Characteristics of Board of Directors

(1) Board Independence (INDBOD): Prior research such as Dechow et al. (1996), Beasley (1996), and Klein (2002) find that the higher the proportion of outside directors, the greater the independence of a company's board of directors. This in turn enhances the monitoring effectiveness of the board of directors. Therefore, we use the ratio of the number of non-busy outside directors to the total number of seats on the board of directors to calculate Board Independence (INDBOD). Kosnik (1987) shows that if outside directors are related to family members of the business, then the directors' monitoring ability over management decreases. Following Hermalin and Weisbach (1988), Shivdasani (1993) and Li et al. (2003), we define outside directors as directors who are non-members of the controlling family and who do not work concurrently as company managers. Specifically, controlling family refers to the family whose members' joint shareholding ratio is the highest of the company and exceeds 10%. In addition, Core et al. (1999) and Milliron

(2000) show that when directors are also those of too many other companies, they are unable to perform their duties well. This reduces the monitoring effectiveness of the board of directors. Article 17 of Supplementary Provisions to the Taiwan Stock Exchange Corporation (TSEC) Criteria for Review of Securities Listings also deems 'working concurrently as independent directors or independent supervisors at a total of more than 5 companies' as diminishing monitoring effect. Therefore, we furthermore define non-busy outside directors as outside directors who do not serve concurrently as directors of more than 5 other publicly traded companies. [This study also uses a more stringent definition of non-busy outside directors. That is, outside directors who serve concurrently as directors at more than 3 publicly traded companies are defined as 'busy' outside directors. The results for using this definition are similar to those of our main tests]. Our purpose is to more accurately capture the monitoring effectiveness of independent directors. [Taiwan is currently aggressively promoting independent directors and supervisors systems. Regulatory agencies have raised numerous clear and stringent conditions for determining independence. However, the mandatory rulings relating to employing independent directors and supervisors apply to firms that are newly listed as of February of 2002. This date is after our sample period, 1996-2001. Therefore, in this study, we cannot follow the strict conditions regarding independent directors in defining independent directors].

(2) Board Size (BODSIZE): we measure this as the total number of seats on the board of directors.

##### Ownership Structure

(1) Non-busy outside director shareholding ratio (INDBOD\_HOLD): we measure this as the ratio of total shareholding of non-busy outside directors and their spouses and children.

External Blockholder Shareholding Ratio (BLOCK): This is the average shareholding ratio of external blockholders who are not their companies' directors, supervisors, or managers and whose shareholding ratio exceeds 5%. [Item 2, Article 214 of Taiwan Corporate Law states that 'shareholder(s) who hold at least five percent of outstanding shares for over a year may request in writing supervisors to file lawsuits against directors on behalf of the company. If the supervisor(s) in the aforementioned item does not file lawsuits within thirty days of the request, the shareholder(s) as indicated in the previous item may file lawsuit against the company.' Therefore, we define shareholders as those who hold over 5% of total shares and comply with related rules. Although, as of November 12 of 2001, the benchmark percentage in the regulation has been amended to 3%, the period of this investigation is from 1996-2001. Therefore, the impact of this amendment on our using 5% as the benchmark in



**Table 1.** Distribution of Sample by Year and Industry

Industry	Year						Total
	85	86	87	88	89	90	
Food, Drink, and Tobacco Industry	16	17	16	16	18	17	100
Oil and Chemical Materials and Products Industry	41	47	51	51	49	55	294
Textile, Clothing and Leather Industry	25	23	25	25	32	35	165
Non-metallic Mineral Products Industry	13	13	14	13	14	15	82
Metals Industry	14	15	18	21	20	24	112
Mechanical Equipment Industry	1	1	1	4	4	10	21
Electronic Components Industry	2	4	13	19	19	29	86
Information, Communications and Consumer Products Industry	24	28	35	41	43	65	236
Electric Power and Other Electronic Machinery and Equipment Industry	5	7	8	11	11	19	61
Transportation and Components Industry	6	8	8	12	15	15	64
Construction and Real Estate Industry	6	14	20	23	24	25	112
Conveyance and Storage Industry	9	10	10	12	14	15	70
Merchandise and Supplies Industry	6	9	10	11	10	11	59
Total	168	196	229	259	273	337	1462

defining blockholders should not be large]. On average, outside directors occupy 27.96% of total seats on the board. This indicates that it is rare for outside directors to serve concurrently on boards of directors of over 5 other companies. The average rate of occurrence is only around 2.73% (27.96%–25.23%).

(2) The external blockholder shareholding ratio equals 0 if the company does not have external blockholders. External blockholders are defined as those who are not relatives of the controlling family shareholders to which general managers belong, and are not companies or other entities controlled by the controlling family shareholders.

(3) Institutional Shareholding Ratio (ISHOLD): Our definition of institutional investors include the following four groups: proprietary traders, domestically funded investment trust funds (within investment trusts), foreign funded investment trust funds (outside investment trusts), and foreign institutional investors (foreign funded).

The relation between individual corporate governance variables and discretionary accruals may be positive or negative. This depends on whether the incentive to manage earnings is upwards or downwards. Therefore, we do not predict the relation between individual governance variables and discretionary accruals numbers for model (4). This study focuses on income-increasing incentives when current period performance is relatively bad and expected future performance is relatively good. We also focus on income-decreasing incentives when current period performance is relatively good and expected future performance is relatively bad. In hypotheses 3 to 12, we expect that board independence, external blockholder shareholding, and institutional shareholding help to restrain income-increasing ( $I(\text{CbFg})=1$ ) and income decreasing ( $I(\text{CgFb})=1$ ) earnings

management behavior. Therefore, we expect the coefficients for the interaction between  $I(\text{CbFg})$  and these three governance variables, respectively, to be significantly negative. On the other hand, we predict that the coefficients for the interaction between  $I(\text{CgFb})$  and these three governance variables, respectively, are significantly positive. However, we do not predict the signs of coefficients for the interactions between board size (BODSIZE), non-busy independent director shareholding ratio (INDBOD\_HOLD) and  $I(\text{CbFg})$ ,  $I(\text{CgFb})$ , respectively.

## B. Data Sources and Sample Selection

We use calendar year system companies listed on the Taiwan Stock Exchange Corporation (TSEC) during 1996-2001 as our preliminary sample. Due to the need to estimate discretionary accruals, we first eliminate industries with less than 10 companies based on the Taiwan Institute of Economic Research's industry classification (TIERIC) and result in 2912 observations. Second, we further delete from our sample observations using the following criteria. (1) Companies with other potential earnings management motivations, e.g. newly listed companies, full payment traded companies and companies that replaced their managing directors in the current year. (2) Companies whose accounting reporting practices are different from average industries, e.g. companies in the financial insurance industry and foreign companies that issue ADRs in Taiwan. (3) Companies with missing data for governance variables, stock prices, and financial information. The resulting sample size is 1462 observations. Table 1 presents the sample firm year

**Table 2.** Descriptive Statistics (n=1462)

Variables	Average	Standard Deviation	Minimum	Maximum	Median
<b>Panel A : Discretionary Accruals</b>					
DA	-0.0007	0.0815	-0.2501	0.3276	-0.0041
LDA	0.0004	0.0883	-0.2637	0.3242	-0.0022
<b>Panel B : Corporate Governance</b>					
BODSIZE	8.3010	4.1954	3	29	7
INDBOD	0.2523	0.2790	0.0000	0.8100	0.1667
INDBOD_HOLD	0.0531	0.0794	0.0000	0.2741	0.0109
BLOCK	0.0316	0.0765	0.0000	0.6703	0.0000
ISHOLD	0.0460	0.0630	0.0000	0.4165	0.0201
<b>Panel C : Other Control Variables</b>					
LEV	0.3929	0.1477	0.0495	0.8249	0.3951
VAR	0.5603	0.7189	0.0497	4.5109	0.2701
TA (in millions)	16699	30876	451.24	340972	7006
SIZE (ln(TA))	15.9038	1.1049	13.0198	19.6473	15.7623

**Variable Definition:** DA is discretionary accruals. LDA is the discretionary accruals for the previous period. BODSIZE is the size of the board of directors. INDBOD, board independence, is the ratio of non-busy outside directors to the total number of directors on the board. INDBOD\_HOLD is the ratio of total shareholding of non-busy outside directors and their spouses and children. BLOCK is the external blockholder shareholding ratio. ISHOLD is the institutional shareholding ratio. LEV is the leverage ratio. VAR is earnings variability. TA is company total assets. SIZE is firm size, and is measured as the log of total assets.

and industry distribution based on the TIERIC.

#### IV. EMPIRICAL RESULTS AND ANALYSES

##### A. Analyses of Descriptive Statistics

Table 2 shows that the average of discretionary accruals is -0.0007, and the median is -0.0041, with the average being greater than the median. In addition, several companies have very large discretionary accruals. Therefore, the distribution of discretionary accruals is right-skewed. With regards to corporate governance, the average number of directors is 9. And the average ratio of non-busy outside directors to the total number of seats on the board is 25.23%. [On average, outside directors occupy 27.96% of total seats on the board. This indicates that it is rare for outside directors to serve concurrently on boards of directors of over 5 other companies. The average rate of occurrence is only around 2.73% (27.96% – 25.23%)]. This indicates that boards of directors for Taiwan's listed companies are mostly controlled by controlling family members or by company managers. The average and median non-busy outside director shareholding ratio are 0.0531 and 0.0109, respectively. Finally, with regards to external governance mechanism, the average external blockholder shareholding ratio is 0.0316, and the median is 0. These suggest that over half of the sample firms do not have external blockholders. The average institutional shareholding ratio is 4.6%, and

the median is 0. This means that the institutional shareholding ratio of Taiwan's listed companies is low. In general, the overall monitoring power of Taiwan listed companies' external governance mechanism is weak.

Table 3 presents different levels of discretionary accruals under various combinations of current and future performances. The cells corresponding to the Cb column and the Fg row presents the discretionary accruals of companies whose current period performances are relatively bad and expected future performances are relatively good (CbFg=1). We predict that under this circumstance, managers have incentive to increase earnings through discretionary accruals. These cells show that the mean (median) discretionary accrual is 0.0150 (0.0076). In addition, over half of these firm observations, i.e. 55.67% of 282 firm observations, employ income-increasing discretionary accruals. Cells corresponding to column Cg and row Fb (CgFb=1) represent firm observations whose current period performance is relatively good and expected future performance is relatively bad. We expect that in this situation, companies will use income-decreasing discretionary accruals. The mean (median) discretionary accrual for these cells is -0.0194 (-0.0164). In addition, 59.14% of the 257 observations have negative discretionary accruals. This provides evidence that over half of these sample companies years use income-decreasing discretionary accruals. These preliminary results are consistent with our prediction. That is, managers use discretionary accruals to smooth

**Table 3.** Discretionary Accruals under Different Combinations of Current and Future Period Performances

			Current Period Performances		Total
			Cb	Cg	
Expected Future Performances	Fb	Mean	0.0013	-0.0194 <sup>***</sup>	-0.0064 <sup>***</sup>
		Median	-0.0054	-0.0164 <sup>***</sup>	-0.0087 <sup>***</sup>
		Sample Size	428	257	685
		Proportion of DA>0	47.20 %	40.86%	44.82%
	Fg	Mean	0.0150 <sup>***</sup>	-0.0016	0.0044
		Median	0.0076 <sup>*</sup>	-0.0057 <sup>***</sup>	-0.0015
		Sample Size	282	495	777
		Proportion of DA>0	55.67 %	44.04%	48.26%
Total	Mean	0.0067 <sup>**</sup>	-0.0077 <sup>***</sup>		
	Median	0.0005	-0.0082 <sup>***</sup>		
	Sample Size	710	752		
	Proportion of DA>0	50.56 %	42.95%		

**Note:** Cb is when a company's current period performance is worse than the median of the company's industry performance. Cg is when a company's current period performance is better than the median of the company's industry performance. Fb is when a company's expected future is worse than the median of the company's industry expected future performance. Fg is when a company's expected future performance is better than the median of the company's industry expected future performance. DA is discretionary accruals numbers. <sup>\*</sup>: significant at the 1% level. <sup>\*\*</sup>: significant at the 5% level. <sup>\*\*\*</sup>: significant at the 10% level.

reported earnings. In the following, we further use regression analyses to investigate whether, after considering future earnings, executives use discretionary accruals to manage earnings.

## B. Regression Analyses

### (a) Test of Earnings Manipulation Behavior

Table 4 presents earnings management behavior with future performance in mind. Since the White test statistics show that there is heterogeneity problem, the standard errors and t-values are calculated based on the heteroskedasticity-consistent covariance matrix following White (1980). Table 4 shows that I(CbFg) is positively related to discretionary accruals (DA) at the 5% level. This means that when current period performance is relatively bad and expected future performance is relatively good, managers will manipulate current period discretionary accruals to borrow from future earnings for embellishing current period earnings. Therefore, the result support hypothesis 1. Second, I(CgFb) is negatively associated with discretionary accruals (DA) at the 1% level. This indicates that when current period earnings is relatively good and expected future earnings is relatively bad, managers may use discretionary accruals to flexibly lower current period earnings. The managers' purpose is to save current period earnings until the future to embellish future earnings performance. Hence, the result is

consistent with hypothesis 2. These empirical results support the findings of Fudenberg and Tirole (1995), DeFond and Park (1997), and Chung et al. (2002).

The test results of control variables are as follows. The coefficient of prior period discretionary accruals (LDA) is significantly negative at the 1% level. This shows that due to the reversal characteristic of accruals, the level of earnings manipulation in the prior period is negatively related to that of the current period, consistent with prior research (Defond and Park 1997; Chung et al. 2002; Young and Wu, 2003). Leverage (LEV) decreases with increases in discretionary accruals at the 1% level, which is harmony with those of Defond and Park (1997), Becker et al. (1998), and Chung et al. (2002). This means that creditors, investors, and regulatory agencies are more likely to pay attention to monitor companies with high financial leverage and then inhibit their incentive and ability of upward earnings manipulation behavior. The coefficient for earnings variability (VAR) is insignificant. Since the relation between earnings variability and current period discretionary accruals may either be positive or negative, the offsetting effect of the two directions may cause the result to be insignificant. The coefficient for firm size is positive and significant at the 1% level. This is inconsistent with Watts and Zimmerman's (1986) political cost hypothesis, but in harmony with the findings of Defond and Park (1997), Becker et al. (1998), Chung et al. (2002), and Young and Wu (2003). This shows that large firms may have more incentive and greater ability to manipulate earnings upward.

**Table 4.** Results Regarding Earnings Management Behavior in Expectation of Future Performance

<b>Dependent Variable : Modified-Jones Model Discretionary Accruals (DA)</b>				
<b>Independent Variable</b>	<b>Expected Sign</b>	<b>Coefficient</b>	<b>Standard Errors</b>	<b>t-value</b>
Intercept	?	-0.1108	0.0339	-3.26 <sup>***</sup>
I(CbFg)	+	0.0117	0.0055	2.11 <sup>**</sup>
I(CgFb)	—	-0.0148	0.0056	-2.64 <sup>***</sup>
LDA	—	-0.1506	0.0297	-5.07 <sup>***</sup>
LEV	—	-0.1047	0.0170	-6.14 <sup>***</sup>
VAR	?	0.0041	0.0030	1.39
SIZE	—	0.0090	0.0020	4.42 <sup>***</sup>
YEAR	?	YES	YES	YES
INDUSTRY	?	YES	YES	YES

Adj R<sup>2</sup> = 0.0631 ; Model F = 5.12<sup>\*\*\*</sup> ; White test F = 1.42<sup>\*\*\*</sup>

**Note:** n=1462. Variable Definitions: I(CbFg) is a dummy variable that equals 1 if a company's current period performance is relatively bad and its expected future performance is relatively good, and 0 otherwise. I(CgFb) is an indicator variable that equals 1 if a company's current period performance is relatively good and its expected future performance is relatively bad, and 0 otherwise. LDA is the discretionary accruals for the previous period. LEV is the leverage ratio. VAR is earnings variability. SIZE is firm size, and is measured as the log of total assets. YEAR is a dummy variable for year. INDUSTRY is a dummy variable for industry. <sup>\*\*\*</sup>, <sup>\*\*</sup>, <sup>\*</sup> : significant at the 1% , 5% and 10% levels, respectively, one-tailed where signs are expected, two-tailed otherwise. If the White test statistics show that there is heterogeneity problem, we present the standard errors and t-values calculated based on the heteroskedasticity-consistent covariance matrix following White (1980).

### **(B) The Relation between Characteristics of the Board of Directors, Ownership Structure, and Earnings Management Behavior**

This section provides analyses of the relation between each governance mechanism and earnings management behavior. Table 5 presents the empirical results. The White test statistics show that there is heterogeneity problem and, therefore, the standard errors and t-values are corrected using White's (1980) procedure. The coefficient for the interaction between board independence (INDBOD) and I(CbFg) is negative and significant at the 5% level. This shows that the higher the proportion of non-busy outside directors, the greater the directors' incentive and ability to restrain upward earnings management behavior, which supports hypothesis 3.

With respect to income-decreasing earnings management behavior, the coefficient for interaction between board independence (INDBOD) and I(CgFb) is significant and negative. The result shows that non-busy outside directors are ineffective in reducing earnings manipulation and is not consistent with hypothesis 4. We conjecture that this scenario arises from the board of directors' monitoring focus being income-increasing earnings manipulation behavior, rather than income-decreasing behavior, due to the general recognition that management is more likely to manipulate earnings upwards rather than downwards. Furthermore, our results show that the coefficients for the interaction between BODSIZE and I(CbFg) and between BODSIZE

and I(CgFb) are both insignificant, which do not support both hypotheses 5 and 6. This may be due to the size of board of directors having contradictory impact on monitoring effectiveness. On the one hand, large boards of directors lack operating efficiency and are easily subject to upper level managers' control (Jensen, 1993). On the other hand, large boards of directors have more directors linking with the external environment and have more experts (Dalton et al. 1999) and thus can monitor the quality of financial reports more effectively. As in Xie et al. (2003), board size is negatively associated with discretionary accruals.

In terms of ownership structure, non-busy outside director shareholding ratio (INDBOD\_HOLD) has significant and positive relation to discretionary accruals when management has income increasing (I(CbFg)) incentives, inconsistent with our expectation. This indicates that larger shareholdings do not provide outside director incentive to effectively monitor the financial statement quality and limit upward earnings management behavior further. In addition, when managers have incentive to decrease earnings (I(CgFb)), non-busy outside director shareholding ratio (INDBOD\_HOLD) is positively associated with discretionary accruals. This shows that non-busy outside director shareholding helps restrain managers' downward earnings management behavior. However, we should interpret with care whether the inhibition of downward earnings management is due to monitoring incentive because shareholders have incentive to use aggressive accounting techniques to

**Table 5.** The Relation between Corporate Governance Mechanisms and Earnings Management Behavior

<b>Dependent Variable: Modified-Jones Model Discretionary Accruals (DA)</b>				
<b>Independent Variable</b>	<b>Expected Sign</b>	<b>Coefficient</b>	<b>Standard Errors</b>	<b>t-value</b>
Intercept	?	-0.1043	0.0284	-3.67 ***
CbFg	+	0.0212	0.0112	1.89 **
CgFb	—	-0.0075	0.0121	-0.62
INDBOD	?	-0.0172	0.0103	1.68 *
BODSIZE	?	-0.0006	0.0005	-1.28
INDBOD_HOLD	?	-0.0518	0.0482	-1.08
BLOCK	?	-0.0506	0.0299	-1.69 *
ISHOLD	?	0.0289	0.0106	2.72 ***
CbFg×INDBOD	—	-0.0438	0.0204	-2.15 **
CbFg×BODSIZE	+	-0.0010	0.0010	-1.05
CbFg×INDBOD_HOLD	—	0.1520	0.0602	2.52 **
CbFg×BLOCK	—	-0.0904	0.0617	-1.47 *
CbFg×ISHOLD	—	-0.0290	0.0234	-1.24
CgFb×INDBOD	+	-0.0551	0.0215	-2.56 ***
CgFb×BODSIZE	—	0.0010	0.0009	1.08
CgFb×INDBOD_HOLD	+	0.1655	0.0498	3.33 ***
CgFb×BLOCK	+	-0.0290	0.0761	-0.38
CgFb×ISHOLD	+	0.0031	0.0208	0.15
LDA	—	-0.1201	0.0222	-5.41 ***
LEV	—	-0.0961	0.0125	-7.67 ***
VAR	?	0.0054	0.0023	2.36 **
SIZE	—	0.0087	0.0019	4.71 ***
YEAR	?	YES	YES	YES
INDUSTRY	?	YES	YES	YES

Adj R<sup>2</sup> = 0.1046 ; Model F= 4.92\*\*\* ; White test F = 1.50\*\*

**Note:** n=1462. I(CbFg) is a dummy variable that equals 1 if a company's current period performance is relatively bad and its expected future performance is relatively good, and 0 otherwise. I(CgFb) is an indicator variable that equals 1 if a company's current period performance is relatively good and its expected future performance is relatively bad, and 0 otherwise. LDA is the discretionary accruals for the previous period. LEV is the leverage ratio. VAR is earnings variability. SIZE is firm size, and is measured as the log of total assets. YEAR is a dummy variable for year. INDUSTRY is a dummy variable for industry. \*\*\*, \*\*, \*: significant at the 1% , 5% and 10% levels, respectively, one-tailed where signs are expected, two-tailed otherwise. If the White test statistics show that there is heterogeneity problem, we present the standard errors and t-values calculated based on the heteroskedasticity-consistent covariance matrix following white (1980).

embellish earnings so as to increase stock prices in benefiting themselves (Loebbecke et al., 1989; Erickson et al. 2004). In general, this study conjectures that the higher the outside director shareholding ratio, the greater the directors' preference for better current period performance as a result of directors' concern for the value of their own stocks. This is consistent with the argument in Article 17 of Supplementary Provisions to the Taiwan

Stock Exchange Corporation (TSEC) Criteria for Review of Securities Listings. The Provisions state that greater outside director shareholding may hurt these directors' independence and hence the monitoring effect.

With respect to external blockholder shareholding ratio, the coefficient for the interaction between the ratio and I(CbFg) is negative and significant at the 10% level, which provides weak support for hypothesis 9. On the other

hand, the coefficient for the interaction between external blockholder shareholding ratio and  $I(CgFb)$  is insignificant, inconsistent with hypothesis 10. These results indicate that blockholders are more aggressive in monitoring managers and hence reduce managers' income-increasing earnings manipulation. However, external blockholders may neglect the fact that managers also reduce earnings and they are not effective in inhibiting managers' current period income-decreasing earnings manipulation behavior.

Finally, with regards to institutional investors' shareholding ratio, the coefficient for the interaction between the ratio and  $I(CbFg)$  is negative, as predicted, but insignificant. The coefficient for the interaction between the ratio and  $I(CgFb)$  is positive but insignificant. Hence, the evidence is inconsistent with hypotheses 11 and 12. They show that high institutional investor shareholding do not play an effective role in monitoring earnings management behavior. This is contradictory to the results of Chung et al. (2002) based on the U.S. data. Taiwan listed companies' institutional investors heavily engage in short-wing transactions. [The entry an exit situations of Taiwan legal entities in centralized markets show that the purpose of hold shares for most legal entities is short-term investment, not long-term. Therefore, using legal entities to fulfill the functions of corporate governance have limited effectiveness. This is different from developed countries such as England and the U.S. where shareholders of legal entities play an important role in the capital market (Securities and Futures Commission 2002)]. In addition, Bushee (1998) finds that institutional investors dealing with transient transactions are ineffective in limiting managers' earnings management activities. Therefore, our results may be due to the fact that most Taiwan institutional investors are myopic and prefer 'better short-term earnings performance', but only few institutional investors monitor managers from the long term perspective. Hence, the institutional investor mechanism, as a whole, is ineffective in restraining managers' earnings smoothing behavior. As to the results of control variables, the coefficient for earnings variability (VAR) is significant. All other results are similar to those of Table 4.

### C. Alternative Measurement for Discretionary Accruals

Similar to pervious research, this study uses discretionary accruals from cross-sectional Modified-Jones model to measure earnings management. However, Dechow et al. (1995), Guay et al. (1996), Bartov et al. (2000), and Kothari et al. (2005) show that any proxy for discretionary accruals yields biased metrics if the measurement error in the proxy is correlated with omitted variables associated with the independent variable of interest or is within a non-random sample. Because the measurement error

for discretionary accruals is related to company performance (Dechow et al. 1995; Bartov et al. 2000; Kothari et al. 2005) and company performance is related to corporate governance mechanisms of interest in this study, we calculate the performance-matched modified-Jones model discretionary accruals using the Kothari et al. (2005) performance-matched method to adjust for discretionary accruals. This can eliminate components of discretionary accruals which are associated with firm performance and thus reduce the risk of having biased results.

Following Kothari et al. (2005), firm performance is measured as return on assets. [Following Kothari et al. (2005), this study calculates return on assets as net income after tax divided by average total assets. Our purpose is to avoid problems with estimating interest rates when using net income after tax plus after-tax interest]. We find a matching firm for every firm by finding a company in the same industry with the return on assets closest to the firm we are matching against. We then calculate adjusted discretionary accruals (DA\_ADJ) by deducting the discretionary accruals of the matching firm from that of our investigation firm and use this measure to rerun our tests. The results are shown in Tables 6 and 7.

Table 6 shows that  $I(CbFg)$  is positively related to adjusted discretionary accruals and  $I(CgFb)$  is negatively related to adjusted discretionary accruals. Similar to the results of Table 4, we find that managers consider the performance of the current period and that of the expected future period to manipulate earnings upward or downward. Second, Table 7 exhibits that board independence and external blockholder shareholding ratio are both negatively related to  $I(CbFg)$ . This indicates that the two mechanisms are effective in restricting upward earnings management behavior. The coefficient for the interaction between board independence and  $I(CgFb)$  is negative and significant, indicating that board independence does not reduce downward earnings management. However, the coefficient for the interaction between external blockholder shareholding ratio and  $I(CgFb)$  is insignificant. This shows that external blockholders shareholding is not effective in inhibiting downward earnings manipulation behavior. The results for these two interactions are similar to those of Table 5. In addition, non-busy outside director shareholding ratio is positively associated with adjusted discretionary accruals. This holds for both upward and downward earnings manipulation behavior. This indicates that the level of shareholding induces outside directors to prefer better current period performance. The results for other corporate governance variables are insignificant, as the results shown in Table 5. Thus, the overall result is robust to whether we use cross-sectional Modified-Jones model or the performance-matched modified-Jones model to compute the discretionary accruals when measuring earnings management.

**Table 6.** Results Regarding Earnings Management Behavior in Expectation of Future Performance: Using Adjusted Performance-Matched-Jones Model Discretionary Accruals (DA\_ADJ)

Dependent Variable : Performance-Matched Modified-Jones Model Discretionary Accruals (DA_ADJ)				
Independent Variable	Expected Sign	Coefficient	Standard Errors	t-value
Intercept	?	-0.1105	0.0452	-2.44 <sup>***</sup>
I(CbFg)	+	0.0149	0.0067	2.23 <sup>**</sup>
I(CgFb)	-	-0.0151	0.0075	-2.00 <sup>**</sup>
LDA_ADJ	-	-0.0440	0.0192	-2.29 <sup>**</sup>
LEV	-	-0.0688	0.0213	-3.23 <sup>***</sup>
VAR	?	-0.0047	0.0040	-1.17
SIZE	-	0.0071	0.0047	1.51 <sup>*</sup>
YEAR	?	YES	YES	YES
INDUSTRY	?	YES	YES	YES

Adj R<sup>2</sup> = 0.0417 ; Model F = 2.38<sup>\*\*\*</sup> ; White test F = 1.42<sup>\*\*\*</sup>

## V. CONCLUSION

This study examines whether managers have incentive to manipulate current earnings in Expectation of future performance. We further examine the role that governance mechanisms, such as board of directors and ownership structure, play in inhibiting earnings management. This study finds that, due to the incentive to secure their positions, Taiwan managers will consider the relative performances of current and expected future periods to manage earnings upwards or downwards. When current period performance is relatively bad and expected future performance is relatively good, managers increase current period earnings via discretionary accruals decisions. On the other hand, when current period is relatively good and expected future performance is relatively bad, managers make discretionary accruals decision to save current earnings for the future. This result is consistent with those of DeFond and Park (1997) and Chung et al. (2002).

With respect to the effectiveness monitoring by governance mechanisms, we find the following. We show that the greater the board independence, the greater the ability and incentives for the board of directors to ensure the quality of financial reports. This in turn inhibits managers' income-increasing earnings manipulation behavior. However, with regards to income-decreasing earnings management behavior, stronger board independence does not have such restraining effect. We conjecture that this may be due to current corporate governance mechanisms focusing on preventing managers' exaggeration of financial statement numbers to increase current period earnings. These mechanisms neglect the possibility that managers may use discretionary accruals to decrease current period earnings so as to increase future earnings. As to board

size, our results show that it is not significantly related to earnings manipulation behavior with expected future performance in mind.

Concerning ownership structure, our empirical results show that when current period performance is relatively bad and expected future performance is relatively good, outside director shareholding ratio is positively related to the level of income-increasing earnings manipulation. However, when current period performance is relatively good and expected future performance is relatively bad, non-busy outside director shareholding is positively associated with income increasing discretionary accruals. This implies that higher independent director shareholding ratio can impact directors' independence. That is, for the sake of their ownership value, outside directors with large shareholding place more emphasis on current period earnings performance. With regards to external blockholder shareholding, it has restraining effect on managers' income-increasing earnings manipulation behavior. On the contrary, since external blockholders neglect managers' incentives for income-decreasing earnings manipulation behavior, the former do not have restraining effect on such behavior. Finally, large institutional investor shareholding is not effective in monitoring earnings management behavior. This may be due to the adverse effect of most Taiwan's institutional investors being short-sighted on monitoring.

This study supplements prior evidence concerning the monitoring effect of corporate governance on earnings management by considering both directions of earnings management concurrently and including various governance mechanisms simultaneously. We provide an insight into understanding which governance mechanisms, in emerging market such as Taiwan, can better play the role of monitoring the quality of financial information. Therefore, our results provide reference to regulators in

**Table 7.** The Relation between Corporate Governance Mechanisms and Earnings Management Behavior Using Adjusted Performance-Results Using Matched Modified-Jones Model Discretionary Accruals (DA\_ADJ)

Dependent Variable: Performance-Matched Modified-Jones Model Discretionary Accruals (DA_ADJ)				
Independent Variable	Expected Sign	Coefficient	Standard Errors	t-values
Intercept	?	-0.1085	0.0408	-2.66 <sup>***</sup>
CbFg	+	0.0136	0.0086	1.58 <sup>*</sup>
CgFb	-	-0.0096	0.0059	-1.63 <sup>*</sup>
INDBOD	?	-0.0210	0.0131	1.60
BODSIZE	?	-0.0007	0.0006	-1.17
INDBOD_HOLD	?	-0.0601	0.0545	-1.10 <sup>*</sup>
BLOCK	?	-0.0741	0.0366	-2.03 <sup>*</sup>
ISHOLD	?	-0.0156	0.0124	-1.26
CbFg×INDBOD	-	-0.0548	0.0285	-1.92 <sup>**</sup>
CbFg×BODSIZE	+	0.0010	0.0010	1.06
CbFg×INDBOD_HOLD	-	0.1383	0.0809	1.71 <sup>**</sup>
CbFg×BLOCK	-	-0.0819	0.0521	-1.57 <sup>*</sup>
CbFg×ISHOLD	-	-0.0172	0.0230	-0.75
CgFb×INDBOD	+	-0.0331	0.0214	-1.55 <sup>*</sup>
CgFb×BODSIZE	-	0.0008	0.0010	0.37
CgFb×INDBOD_HOLD	+	0.0864	0.0674	1.43 <sup>*</sup>
CgFb×BLOCK	+	-0.0092	0.0877	-0.10
CgFb×ISHOLD	+	0.0051	0.0258	0.20
LDA	-	-0.0242	0.0125	-1.94 <sup>**</sup>
LEV	-	-0.076	0.0167	-4.55 <sup>***</sup>
VAR	?	0.0021	0.0012	1.75 <sup>**</sup>
SIZE	-	0.0053	0.0025	2.12 <sup>**</sup>
YEAR	?	YES	YES	YES
INDUSTRY	?	YES	YES	YES

Adj R<sup>2</sup> = 0.0865 ; Model F = 3.78<sup>\*\*\*</sup> ; White test F = 1.48<sup>\*\*</sup>

**Note:** n=1462; Variable Definitions: DA\_ADJ is adjusted performance-matched Modified-Jones Model discretionary accruals. LDA\_ADJ is prior period adjusted performance-matched Modified-Jones Model discretionary accruals. I(CbFg) is a dummy variable that equals 1 if a company's current period performance is relatively bad and its expected future performance is relatively good, and 0 otherwise. I(CgFb) is an indicator variable that equals 1 if a company's current period performance is relatively good and its expected future performance is relatively bad, and 0 otherwise. LDA is the discretionary accruals for the previous period. LEV is the leverage ratio. VAR is earnings variability. SIZE is firm size, and is measured as the log of total assets. YEAR is a dummy variable for year. INDUSTRY is a dummy variable for industry. <sup>\*\*\*</sup>, <sup>\*\*</sup>, <sup>\*</sup>: significant at the 1% , 5% and 10% levels, respectively, one-tailed where signs are expected, two-tailed otherwise. If the White test statistics show that there is heterogeneity problem, we present the standard errors and t-values calculated based on the heteroskedasticity-consistent covariance matrix following White (1980)

establishing policies regarding corporate governance. In addition, it is worth noting that governance mechanisms present an asymmetric monitoring effect on upward and downward earnings manipulation behavior, respectively, as evidenced in this study. Hence, we suggest that company monitors should pay attention to the potential for managers' incentive to manage earnings downward

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