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**An Investigation of the Association between Corporate Governance, Earnings Management
and the Effect of Governance Reforms**

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Abstract

Purpose - The purpose of this study is to examine the impact of recent corporate governance reforms on the association between governance practices and earnings management.

Design/methodology/approach - This study examines the impact of corporate governance reforms by using a firm fixed-effect, cross-sectional analysis of 200 firms listed on the ASX for the financial years ending in 2000 and 2005. This paper examines the association between firms' corporate governance practices and the quality of financial reports as measured by the magnitude of earnings management pre-and post- the governance reforms (CLERP 9 and ASX CGC).

Findings - The results of this study indicate that certain governance practices are important in limiting earnings management. In particular, board independence and audit committee independence, are associated with lower performance-adjusted discretionary accruals, one commonly used measure of earnings management. However, increasing executive shareholdings provides incentives to manage earnings.

Practical implications – This study is important to investors, academics and policy makers as it demonstrates that governance reforms that encourage firms to adopt better governance practices reduces the likelihood of earnings management.

Originality/value - There is limited research on the association between corporate governance practices or the recent corporate governance reforms (ASX CGC Recommendations and CLERP 9) on earnings management in Australia. This study extends the literature by demonstrating the impact of recent corporate governance reforms on board independence, audit committee effectiveness and executive directors' shareholding and the association with earnings management.

Keywords Earnings management, insider share ownership, corporate governance practices and reforms.

Paper type Research paper

1. Introduction

Corporate governance controls are designed to encourage the efficient use of company resources and promote accountability for the stewardship of resources used by managers (Cadbury, 2000). The recent global spate of companies using fraudulent accounting methods to mask declining financial conditions has attracted the attention of regulators and accountants. The U.S. government responded to the corporate scandals with the Sarbanes-Oxley Act in January 2002. The Sarbanes-Oxley Act (SOX) is designed to review dated legislative audit requirements and applies to publicly listed companies. The Australian response to these corporate indiscretions is the Australian Stock Exchange (ASX) Corporate Governance Best Practice Recommendations and the Corporate Law Economic Reform Program (Audit Reform and Corporate Disclosure) Act (known as CLERP 9).

The ASX Corporate Governance Council (CGC) released its Principles of Good Corporate Governance and Best Practice Recommendations in March 2003. It includes 28 (optional) recommendations relating to 10 corporate governance principles. The adoption rate of the recommendations is very promising. The average adoption rate for all 28 recommendations was 74% in 2005 (ASX Corporate Governance Council, 2006). The underlying objective of CLERP 9, which became law in Australia in 2004, is to promote transparency, to strengthen the regulatory framework in the key areas of corporate accountability and protection of shareholder rights. CLERP 9 introduced civil liability in the Corporations Act for breaches of the ASX continuous disclosure requirements and extends liability to directors and executives¹. The civil liability assigned to board members is designed to encourage listed companies to increase the financial literacy and independence of audit committee members.

This study is motivated by two considerations. First, are specific corporate governance practices associated with lower levels of earnings management in 2000 or 2005? Second, are

improvements in specific corporate governance practices between 2000 and 2005 associated with lower levels of earnings management? We examine the impact of corporate governance reforms by examining the association between firms' corporate governance practices and the quality of their financial reports as measured by the magnitude of earnings management (proxied by performance-adjusted discretionary accruals) pre-and post- the governance reforms (CLERP 9 and ASX CGC). The focus of our research is on board and audit committee effectiveness which encompasses greater board and audit committee independence. Given that the ASX CGC recommendations and CLERP 9 are designed to improve the quality of financial reporting, we would expect to observe a significant reduction in earnings management in firms that change their corporate governance practices to comply with the recommendations.

This paper contributes to the research on corporate governance in several ways. There is an extensive body of literature on the impact of corporate governance practices on various outcomes, such as, firm performance, the value relevance of earnings, earnings management and the impact of regulation. The vast majority of the research examines the effects of corporate governance practices and regulations in the United States (U.S.) and the United Kingdom (U.K.) This notion has not been fully explored in the Australian context, a market similar but different in certain aspects. In Australia, expected litigation costs are relatively low and the provision of forward-looking accounting information is voluntary. There is limited research on the association between corporate governance practices or the recent corporate governance reforms (ASX CGC Recommendations and CLERP 9) on earnings management in Australia.

The results of the study of the corporate governance practices of 200 Australian listed firms indicate that certain governance practices are important in limiting earnings management. The results of this study demonstrate that the association between corporate governance practices and

earnings management is only significant post the governance reforms in the year 2005. Board independence and audit committee independence are negatively associated with the level of performance-adjusted discretionary accruals (PACDA), indicating lower levels of earnings management, while executive shareholdings are positively associated with performance-adjusted discretionary accruals. However, there is no significant relationship between the number of audit committee meetings and performance-adjusted discretionary accruals. Following governance reforms, board and audit committee independence improved, and audit committee meeting frequency increased significantly. However, these changes are not necessarily associated with less earnings management. The results of this study show that improvements in board independence are associated with decreases in PACDA, while increasing audit committee activity is not associated with PACDA. There is no significant association with earnings management for firms that increased audit committee independence following the governance reforms. However it should be noted that audit committee independence is significantly associated with lower PACDA in 2005. There is no significant reduction in executive share ownership post the reforms and the positive and significant association between executive share ownership and PACDA remains.

2. Background and Hypotheses Development

According to agency theory the separation between ownership and control may lead to self-interested actions by managers (Jensen and Meckling, 1976). When conflicts exist between management and stakeholders, the value of the firm is not maximised and the difference between the theoretical maximum value of the firm and the actual value of the firm is attributed to agency costs (Palliam and Shalhoub, 2003). Prior research provides evidence of myriad incentives that motivate managers to manage earnings, such as the quality of the audit firm (Davidson III et al.,

2004; Myung and Taewoo, 2004), the distribution of ownership (Hsu and Koh, 2005; Koh, 2003), CEO's with dual leadership positions (Davidson et al., 2004), the adoption of International Financial Reporting Standards (IFRS) (Tendelo and Vanstraelen, 2005), management share ownership (Bergstresser and Philippon, 2006), tax incentives (Dhaliwal et al., 2004) and hiring an executive from a company's external audit firm (Geiger et al., 2005). Myung and Taewoo (2004) suggest managers adjust discretionary accruals to increase current-period earnings before they sell their own firms' shares. The majority of this research argues that earnings manipulation is concealing the truth about earnings and has potentially negative effects on stakeholders' interests. This potential conflict of interest leads to the need to monitor managers' behaviour in order to protect shareholders' rights.

Corporate governance provides a framework to ensure suppliers of corporate finance achieve a return on their investment (Shleifer and Vishny, 1997). The board of directors and audit committees are the two main internal corporate governance mechanisms established to monitor managers' behaviour and also ensure the reliability of financial reporting. Extensive research has been conducted relating to the association between earnings management and certain corporate governance practices, including board and audit committee composition (Agrawal and Chadha, 2005; Beasley, 1996; Davidson, et al., 2005; Klein, 2002; Peasnell et al., 2005; Vafeas, 2005). On balance, the majority of this research has found that the probability of earnings management is lower in companies with an independent board or an effective audit committee.

In order to align agents' incentives with interests of principals, diverse governance mechanisms are built into the agency contracts (Fama 1980; Fama and Jensen 1983). The role of regulation in this process can be explained by referring to agency theory. Regulation attempts to overcome information asymmetry between managers and shareholders and protect each party's contractual rights. Due to incomplete contracts, regulation (e.g. ASX CGC and CLERP 9)

attempts to protect stakeholders by mandating corporate governance practices. Regulations smooth the progress of the efforts of contracting parties to maximise the joint gains (the contractual surplus) from transactions (Schwartz and Scott, 2003). Changes in regulations comprise a source of experiments (Hermalin and Weisbach, 1991) and for this reason our study examines the impact of recent corporate governance reforms on the quality of financial reporting.

Financial report preparers in Australia have recently experienced changes to their roles and responsibilities. Some changes have arisen from the decision to adopt IFRS. Other changes have arisen in response to events in the business environment such as initiatives to improve auditors' independence (Brown and Tarca, 2005). The main focus of CLERP 9 can be classified into two parts: first, accounting and audit reform, especially aiming to improve the independence of auditors and emphasise the board's accountability for the financial report; and second, enhancing corporate disclosure. Corporate governance is no longer left to be accomplished through voluntary disclosures as CLERP 9 is enforced through a regime of rules that carry criminal penalties. The Corporations Act enforces continuous reporting obligations on companies that are disclosing entities, listed companies and some unlisted public companies with more than 100 shareholders, when certain material events take place regarding the company's operations or financial position (Hanrahan et al., 2004). The Corporations Act is not only concerned with the disclosure of information, but also with ensuring (as much as possible) the quality of the information (Hanrahan et al., 2004). If regulation is effective and enhanced corporate disclosure decreases the information asymmetry between managers and shareholders, then earnings quality should improve.

2.1 Board of Directors

The board of directors does not bear the major share of the wealth effects of their decisions (Fama and Jensen, 1983) and exists to prevent management from pursuing their personal

objectives at the expense of the stakeholders (Fama, 1980). The composition of a board plays a crucial role in corporate governance mechanisms. The board must ensure the integrity of the corporation's accounting and financial reporting systems. These systems include monitoring risk, financial control, and compliance with regulations. According to the New York Stock Exchange (NYSE) Corporate Accountability and Listing Standards Committee (2002), an effective board of directors should ensure the validity of the accounting choices made by management and the financial consequences of such decisions (Davidson et al., 2005).

Prior research has found that the board of directors can play an important role in increasing the quality of financial reporting. According to Beasley (1996), as the number of independent directors on the board increases, the likelihood of financial reporting fraud decreases. Dechow et al. (1996) suggest that firms manipulating earnings are more likely to have boards of directors dominated by management. The probability of earnings manipulation is lower in companies with boards or audit committees that have an independent director with financial expertise (Agrawal and Chadha, 2005). Persons (2006) argues that the higher the independence of directors, the lower the likelihood of non-financial reporting fraud (i.e., fraud against customers and governments, and violation of regulations other than financial reporting).

Chen and Jaggi (2000) find that the proportion of independent directors on corporate boards is positively associated with the comprehensiveness of financial disclosures. Klein (2002) found a negative relationship between board independence and abnormal accruals, a measure of earnings management. In contrast, Fama and Jensen (1983) argue that firms benefit from having insiders on the board given that senior managers bring in expertise and improve the decision making process. In addition, Bedard et al. (2004) fail to find an association between the level of board independence and earnings quality with respect to U.S. firms.

The research in this area generally suggests that there is a negative association between the level of board independence and earnings management which leads to the following hypothesis:

H1a: There is a negative association between the level of board independence and earnings management.

2.1.1 The effect of regulation on the association between earnings management and the board of directors

Do corporate governance reforms and the effectiveness of the governance mechanisms prevent management's manipulation of earnings? In the U.S., SOX was followed by other corporate reforms such as those by the NYSE and the National Association of Securities Dealers, and American Stock Exchange reforms. As a result of these reforms, listed companies in the U.S. must have a majority of outside independent directors (Petra, 2006).

Petra (2006), examines the actual governance structures of Enron, WorldCom, and Global Crossing during the years of their accounting scandals. The proportions of outside independent directors on the boards of those companies during that period were: 50 percent to 55 percent for Enron Corp., 40 percent to 50 percent for WorldCom Inc. and 25 percent to 45 percent for Global Crossing Ltd. Despite the presence of the outside independent directors, these companies suffered collapses in their corporate governance systems (Petra, 2006).

If we consider Australian examples before their collapses, the board of HIH Insurance Limited consisted of seven directors of which five were non-executive directors (71%) and the board of One.Tel Limited consisted of nine directors of which five were non-executive directors (56%). From the previous examples of corporate collapses it is hard to say that new reforms will prevent the reoccurrence of the corporate collapses and improve earnings management. If those who are charged with governance only focus on the form, that is, the appearance of compliance

with the corporate reforms, it is highly likely that these reforms will not have any positive effect on the quality of financial reporting. The directors need to focus on the substance of the reforms to improve the quality of financial reporting.

If regulation does have a positive effect on board of directors' behaviour, then we expect that, for firms that change the board to be more independent, there will be a significantly negative association between the proportion of non-executive directors on the board and earnings management. We do not expect to find any significant association for firms that do not change their board structure, either because the board is already dominated by independent directors, or because the practice is not mandatory. The previous discussion leads to the following hypothesis.

H1b: There is a negative association between board independence and earnings management for the firms that increase board independence subsequent to governance reforms.

2.2 Executive Directors' Share Ownership

According to agency theory, increasing the level of executive share ownership might reduce the amount of owner/manager conflict leading to clearer alignment of the goals of management and shareholders (Jensen and Meckling, 1976). This goal alignment argument suggests that ownership in the firm ensures managers will undertake risk-bearing strategies that will increase share value. However, when the incentives of managers are based on their companies' financial performance, it may be in their self-interest to give the appearance of better performance through earnings management. The combination of management's discretion over reported earnings and the effect these earnings have on their future wealth leads to a potential agency problem. Bergstresser and Philippon (2006), suggest that the use of discretionary accruals in manipulating earnings is much stronger in firms where the CEO's potential total compensation is linked to the value of stock and option holdings. Further research (e.g. Cheng and Warfield, 2005; Park and Park, 2003; Richardson, Tuna and Wu, 2003) suggests that managers' equity holdings is

associated with earnings management based on the assumption that managed earnings will be mis-priced and managers can take advantage of the mis-pricing by selling shares or exercising options (Dechow and Schrand, 2004).

Agency theorists suggest that executive share ownership can have undesirable risk-bearing properties and that managerial share ownership should be viewed with caution (Beatty and Zajac, 1994). According to formal agency theory, substantial managerial share ownership may increase the risk borne by executives. Managers are more likely to undertake high risk projects and manipulate earnings in order to increase their own wealth. Therefore, increasing the level of executive directors' ownership further erodes the independence of the board as high levels of ownership can provide incentives for executive directors to manipulate earnings to increase their wealth. The preceding discussion suggests that there is a positive relationship between increasing executive directors' share ownership and earnings management leading to the following hypothesis:

H2a: There is a positive association between executive directors' share ownership and earnings management.

2.2.1 The effect of regulation on the association between the executive directors' share ownership and earnings management

Since enactment of CLERP 9, executive directors (CEOs and CFOs) are required to certify to the board of directors that the financial statements are in accordance with the Corporations Act and accounting standards². The penalty for directors for trading while insolvent and non-payment of debts has increased from 10 to 20 years. Executive directors' legal responsibilities are extended in terms of presenting the true and fair view of the companies. Under the strengthened regulations and codes, earnings manipulation might have more serious consequences than previously. For executive directors to increase their wealth by earnings management is now more risky and thus

earnings manipulation is not as appealing. Under this condition, executives might reduce their ownership stake and try to find some other ways to increase their wealth. Contrary to agency theory, decreasing the level of executive share ownership might reduce the amount of owner/manager conflict (Jensen and Meckling, 1976).

If regulation does have a positive effect on the extent of share ownership of executive directors, then we expect that, for firms that reduce their executive share holdings, there will be a reduction in earnings management. Thus, there will be a significantly negative association between the executive directors' share ownership and discretionary accruals subsequent to the reforms. Alternatively, for firms where the ownership of executive directors increased post regulation, we expect to find a positive association with earnings management. We do not expect to find any significant association for firms that do not change their executive shareholdings, either because the executive shareholdings are at a low level, or because the practice is not mandatory. The previous discussion leads to the following hypothesis:

H2b: There is a positive (negative) association between increasing (decreasing) the level of executive directors' share ownership and earnings management subsequent to governance reforms.

2.3 Audit Committee Effectiveness and Earnings Management

According to agency theory, shareholders require protection because agents (management) may not always act in the best interests of the principals (shareholders) (Fama, 1980; Fama and Jensen, 1983; Jensen and Meckling, 1976). In order to overcome this problem, the board undertakes an oversight role that involves monitoring the CEO and other executive managers, approving the corporation's strategy, preparing the financial statements and monitoring the control system (DeZoort et al., 2002). To improve efficiency, the board delegates some of its responsibilities to board committees. The audit committee is one of the special committees

established by the board with ninety percent of Australian listed companies having an audit committee (Hanrahan et al., 2004). As the audit committee is an extension of the full board the audit committee is the ultimate monitor of the financial reporting process. The primary purpose of audit committees is to ensure credible financial reports (see, for example, the Treadway Commission, 1987). Accordingly, regulatory bodies and researchers are interested in the features of the audit committee that will improve its efficiency. The characteristics associated with audit committee effectiveness in this study are audit committee independence and activity.

The characteristics of the audit committee impact on the efficiency of audit committees in performing their responsibilities (Abbott et al. 2003). Despite their responsibilities, executive directors on the audit committees might still have the motivation to manipulate earnings or conceal earnings management to hide a deteriorating financial position. However, independent directors are not likely to have incentives to manipulate earnings as their income is not reliant on the firm's performance. Accordingly, it is expected that independent audit committees would play a positive role in reducing the probability of earnings management.

However, prior research has found mixed results on the association between the level of audit committee independence and earnings management. Some research has found a negative association between audit committee independence and earnings management (Bédard et al., 2004; Klein, 2002; Peasnell et al., 2006) while other research has failed to find any significant association between audit committee independence and earnings management (Peasnell et al. 2005; Xie et al. 2003). Research has found that greater audit committee independence is associated with better reporting quality and a reduced likelihood of fraud (McMullen and Raghunandan, 1996).

Regarding, audit committee diligence; it is argued that inactive audit committees are not likely to supervise management effectively. Prior research and regulatory bodies suggest that

audit committees should hold a minimum of three or four meetings a year (Institute of Internal Auditors, 1991). Accordingly, it is expected that active audit committees will play a positive role in reducing the probability of earnings management. Prior research has also found a negative association between the frequency of audit committee meetings and earnings management (Klein, 2002; Xie et al). McMullen and Raghundan (1996) suggest that increasing the frequency of audit committee meetings reduces the likelihood of enforcement action by the Securities and Exchange Commission (SEC) in the U.S. The preceding discussion leads to the following hypothesis:

H3a: There is a negative association between audit committee independence and earnings management.

H3b: There is a negative association between audit committee meeting frequency and earnings management.

2.3.1 The effect of regulation on the association between the audit committee effectiveness and earnings management.

With the issuance of the CLERP 9 in Australia, audit committee responsibilities and authority have also increased. Audit committees are now expected to ensure the integrity of the financial reports and to be more effective in terms of their supervisory roles than previously. However, HIH Insurance Limited and One.Tel Limited both had audit committees consisting of a majority of non-executive directors before they collapsed. In addition, the audit committee members were meeting regularly. The U.S. corporate collapses of Enron, Worldcom and Global Crossing, demonstrated governance practices of audit committees with a minimum of three members and at least 60% of the members were independent (Petra, 2006). That is, these companies had the appearance of compliance with the regulations.

It is difficult to conclude that improvements in the efficiency of the audit committee will definitely decrease earnings management. However, these improvements might still have

positive effects as suggested in previous research (e.g. Klein, 2002; Peasnell et al., 2006; Xie et al., 2003). Braiotta and Zhou (2006) find that firms that change their audit committee structure are associated with decreased earnings management.

If regulation does have a positive effect on audit committee behaviour, then we expect to find a significant negative association between corporate governance practices and discretionary accruals for firms with more effective audit committees. That is, firms that increase the independence of the audit committee and/or increase the frequency of the audit committee meetings. In this paper, both these practices are regarded as improving the effectiveness of the audit committee. The previous discussion leads to the following hypothesis:

H3c: There is a negative association between audit committee independence and earnings management for firms increasing audit committee independence following the governance reforms of the ASX CGC and CLERP 9.

H3d: There is a negative association between audit committee meeting frequency and earnings management for firms increasing the number of audit committee meetings following the governance reforms of the ASX CGC and CLERP 9.

3. Research Method

The present study involves a firm fixed-effect, cross-sectional analysis of 200 firms listed on the ASX for the financial year ending in 2000 and 2005. Individual models are used to test the hypotheses. The models regress the absolute value of performance-adjusted current discretionary accruals on a set of governance and control variables.

3.1 Sample Selection Criteria

The sample consists of 200 listed companies selected for this research for the years 2000 and 2005 in order to make a reliable comparison of the effects of corporate governance best practice

recommendations. The original data set consisted of 388 top 500 firms for the year 2000. The final sample of 200 firms is derived from the firms that remained listed in 2005 and also for which annual reports are available either on the Connect4 database, on company websites or the DatAnalysis database. Information regarding boards of directors and audit committee characteristics is obtained from disclosures made in company annual reports.

The years 2000 and 2005 are chosen to ascertain if corporate governance reforms impact the corporate governance practices of firms. After the demise of the largest global audit company, Arthur Andersen, in 2002, corporate governance became a much more significant issue than prior to 2002.

Two significant corporate governance reforms took place between 2000 and 2005. In 2003, the CGC released the Principles of Good Corporate Governance and Best Practice Recommendations (PGC and BPR) although it was not mandatory to comply with these recommendations. However, it was a crucial step to improve corporate governance practices. In 2004 CLERP 9 became law in Australia and directors' liabilities increased. This research investigates the impact of corporate governance reforms on the quality of financial reporting by comparing governance practices of firms in the years 2000 and 2005.

The following model is developed to test the hypotheses. Separate regressions are run for each independent variable to test the association with the dependent variable, PACDA. Finally, the complete model is tested to determine the relative significance of the governance variables on PACDA. The change model tests the association between the changes in governance practices and PACDA.

$$\text{PACDA} = \alpha_0 + \alpha_1 \text{PBNED} + \alpha_2 \text{PANED} + \alpha_3 \text{NACM} + \alpha_4 \text{EDs SHARES} + \alpha_5 \text{SIZE} + \alpha_6 \text{LOSS} + \alpha_7 \text{GROWTH} + \alpha_8 \text{GEARING} + \alpha_9 \text{ROA} + e \quad (1)$$

$$\text{PACDA} = \alpha_0 + \alpha_1 \text{DIFPBNE}D + \alpha_2 \text{DIFPANE}D + \alpha_3 \text{DIFNACM} + \alpha_4 \text{DIFEDs SHARES} + \alpha_5 \text{SIZE} + \alpha_6 \text{LOSS} + \alpha_7 \text{GROWTH} + \alpha_8 \text{GEARING} + \alpha_9 \text{ROA} + e \quad (2)$$

Where:

Dependent variable:

PACDA = Absolute value of performance-adjusted current discretionary accruals based on Kothari et al. (2005)

Independent variables:

PBNE D (-) = proportion of non-executive board directors to total directors on the board.

DIFPBNE D (-) = difference in the proportion of non-executive board directors calculated as the proportion of non-executive directors on the board in 2005 less the proportion of non-executive directors on the board in 2000.

PANE D (-) = percentage of non-executive directors on the audit committee (AC).

DIFPANE D (-) = difference in the proportion of non-executive audit committee directors calculated as the proportion of non-executive directors on the AC in 2005 less the proportion of non-executive directors on the AC in 2000.

NACM (-) = number of audit committee meetings per annum.

DIFNACM (-) = difference in the number of audit committee meetings per annum in 2005 compared with 2000.

EDs SHARES (+) = the total number of ordinary shares held by the executive directors divided by the total number of issued ordinary shares.

DIFEDs SHARES (+) = difference in the total number of ordinary shares held by the executive directors divided by the total number of issued ordinary shares in 2005 compared with 2000.

Control Variables:

SIZE (+) = natural log of total assets in million dollars.

LOSS (?) = dummy variable of 1 if income is <0; 0: otherwise

GROWTH (?) = ratio of the firm's market value of common equity to book value of common equity at the beginning of the year.

GEARING (?) = (Short term debt + long term debt - cash) / shareholders equity

ROA (?) = Earnings before interest / (total assets less outside equity interests)

3.2 *Dependent Variable*

The dependent variable, earnings management, is proxied by performance-adjusted discretionary accruals. Accruals can be decomposed into six categories:

- Based on managerial control: discretionary (unexpected or abnormal) and non-discretionary
- Based on the time period: current and long-term
- Based on performance: Performance adjusted and not performance adjusted

Persistence and permanence alone are not good indicators of earnings quality as managers are motivated by these characteristics to present an image of themselves as good managers. Dechow and Schrand (2004) suggest that large accruals (of either sign) indicate volatility and low quality earnings as accruals are likely to contain estimation errors and the current earnings figure is unlikely to reflect the company's current operating performance, future operating performance or measure firm value. Current discretionary accruals are adjustments regarding short-term assets and liabilities. According to recent research, current discretionary accruals are more vulnerable to management's earnings manipulation (e.g., Ashbaugh et al. 2003). Therefore, the analysis is based on current discretionary accruals rather than total accruals as in prior research (e.g. Oei et al, 2008). Ayers et al. (2006) suggest that the positive association between discretionary accruals and earnings intensifies around the actual profit benchmark.

Given the importance of the firm's growth rate (Kothari et al., 2005) in calculating current discretionary accruals, the company's performance is controlled for in the model. The dependent variable is termed 'performance-adjusted current discretionary accruals (PACDA)'. This measure is adjusted for performance by including a lagged ROA. It is predicted that improvements in corporate governance practices lead to an improvement in the quality of the companies' earnings figure, as proxied by the level of absolute discretionary accruals. Please see Appendix 1 for the PACDA calculation.

3.3 Independent Variables

The Board's ability to act as an effective monitoring mechanism depends on its independence from management (Beasley, 1996; Davidson et al., 2005; Dechow et al., 1996). Board independence is measured as the proportion of non-executive directors on the board. The significant role of non-executive directors in monitoring management is also documented by various international and local guidelines (for example, see ASX, 2003; Cadbury Committee,

1992; CLERP 9, 2004; NYSE, 2002). A negative association is expected between the proportion of non-executive directors and PACDA (Klein, 2002). Vafeas (2005) finds that more appropriately structured audit committees and boards produce higher-quality earnings information.

In this study, audit committee effectiveness is proxied by two characteristics, independence and activity. Prior research argues that the ability of the audit committee to detect earnings manipulation is associated with the level of audit committee independence (Bédard et al., 2004; Klein, 2002; McMullen and Raghunandan 1996; Peasnell et al., 2006). Regarding audit committee activity, prior research argues that the effectiveness of an audit committee is also dependent on the frequency of meetings (McMullen and Raghunandan, 1996). In order to ensure the appropriateness of the financial reporting process, audit committee members should meet regularly (McMullen and Raghunandan, 1996). Consistent with this argument, Xie et al. (2003) find that the frequency of audit committee meetings is negatively associated with earnings management. We expect that the proportion of non-executive directors on the board and audit committees and the frequency of audit committee meetings to be negatively associated with PACDA, consistent with prior research. We do not consider the role of the independence of the chair of the board or the audit committee in earnings management in this study. As the majority of firms in Australia have an independent board and/or audit committee chair there is little variation between firms sufficient for statistical analysis.

Agency theory indicates that executive share ownership can act as an incentive to reduce the underlying agency problem of separation of ownership from control and increase the welfare of the shareholders. However, a large body of literature suggests that extensive stock ownership can motivate the executives to behave opportunistically and inflate stock values artificially by violating reporting standards or using fraudulent reporting (Beasley 1996; Warfield et al. 1995).

A negative relationship is expected between earnings management (PACDA) and the proxies in this study for good corporate governance practices: percentage of non-executive board directors (PBNEED); percentage of non-executive audit committee directors (PANED); and the number of audit committee meeting (NACM). However, a positive relationship is expected between earnings management and the percentage of share ownership of executive directors, since this practice may compromise directors' independence.

The changes in the governance variables between 2000 and 2005 are regressed against PACDA to investigate the effects of recent corporate governance reforms. A negative relationship between the governance variables and PACDA is expected for firms that increase the proportion of non-executive directors on board (DIFPBNEED) and the audit committee (DIFPANED) and the frequency of audit committee meetings (NACM). A positive relationship is expected between the changes in executive director's ownership (DIFEDs SHARES) and PACDA as increases in ownership provide greater incentives to manipulate earnings.

3.4 Control Variables

Firm size affects earnings manipulation (Dechow and Dichev, 2002). Dechow and Dichev (2002) find that accrual quality is positively related to firm size. Since large firms have more stable and predictable operations and have more diversified business activities they have fewer and smaller estimation errors. Size is expected to be negatively associated with the management of earnings as large firms are more likely to report higher quality earnings, primarily due to political pressure and investors' scrutiny (Warfield et al., 1995). Size is measured as the natural logarithm of total assets as at June 30.

The following variables are included in the model to account for the impact on earnings management. The direction of the relationship is not predicted due to the conflicting results of prior research. Gearing is included as a control variable as it is expected that debtors of highly

leveraged firms are concerned when firms are approaching financial distress and are therefore more likely to monitor earnings closely. On the other hand, firms with high leverage are motivated to manipulate earnings to meet debt covenants. According to Saleh and Ahmed (2005), distressed firms manipulate earnings downward and managers adopt income-decreasing accruals during debt renegotiation. Gearing is measured as the ratio of (short term debt + long term debt - cash) to shareholders equity.

Growth opportunities of the firm are likely to have an impact on the quality of the earnings figure. The ratio of market value of common equity to book value of common equity is used to capture the firm's growth opportunities (Smith and Watts, 1992). Firms with low growth opportunities have limited investment opportunities and accordingly have high free cash flows and excess cash. Subsequently managers working for low growth firms can act opportunistically by means of excessive perquisite consumption, hiding non-optimal expenditures, misappropriation of assets and salary enhancement (Jensen 1986). Further, firms growing rapidly may have internal control problems (Kinney and McDaniel 1989). Companies with high growth rates may have problems operating efficient audit committees and this might exacerbate the practice of earnings management. Growth is measured as the ratio of market capitalisation on the last day of the company's financial year to shareholders equity per share (Price to Book Value).

Return on assets is included as a control variable as it is expected that firms with lower performance tend to manipulate earnings figures and this should be positively associated with earnings management. Return on assets is measured as the ratio of earnings before interest to total assets less outside equity interests.

Dechow and Dichev (2002) find that accrual quality is negatively related with loss incidence. Management is more likely to manipulate the earnings figure in cases of financial distress. Consistent with this argument, managers are more likely to make income-increasing

abnormal accruals to avoid reporting losses and earnings reductions (Peasnell et al., 2005). Firms with an accounting loss are included as a dummy variable, equal to “1” if the firm experienced a loss during the fiscal year and “0” otherwise. Finally, industry effects are controlled for in the calculation of PACDA³.

4. Results and Discussion

The descriptive statistics in Table 1 demonstrate the following for the sample of 200 firms in 2000 and 2005. On average, executive directors in 2005 own 5 percent (6% in 2000) of the total issued shares with a maximum of 67 percent (62% in 2000) and a minimum of zero percent. On average, 75 percent (72% in 2000) of the directors on boards and 94 percent (84% in 2000) of the directors on audit committees are non-executive directors. There are also some companies which have no non-executive directors on their committees and some companies with 100 percent non-executive directors on their committees. On average, audit committees in 2005 hold 3.6 (2.7 in 2000) meetings in a financial year.

Individual t-tests of the differences of the means are reported in Table 1 to determine the significance of the differences between the years 2000 and 2005. There is a significant difference in the mean of the proportion of non-executive directors on the board ($p = 0.013$) and on the audit committee of nearly 10 percent ($p = 0.000$). This result suggests that governance reforms have been effective in increasing board and audit committee independence. There are significant differences in the mean of the number of audit committee meetings between 2000 and 2005 ($p = 0.00$). Recent reforms are effective in increasing the number of audit committee meetings by nearly one extra audit committee meeting per year. However, there is no significant reduction in executive director ownership between 2000 and 2005.

Insert Table 1 here.

The Pearson's Correlation Matrix presented in Table 2 shows that the independent variables, proportion of non-executive directors on the board and audit committee and number of audit committee meetings, are negatively associated with PACDA while executive directors' ownership is positively correlated with PACDA. The negative correlation between the proportion of non-executive directors on the board and audit committee and PACDA supports the argument that as the number of independent directors on the board and audit committee increases, the credibility of the financial reporting improves (Beasley, 1996; Bedard et al., 2004; Chen and Jaggi, 2000; Persons, 2006). The number of audit committee meetings is negatively and significantly correlated with PACDA. This result supports the argument that a more active audit committee is associated with less earnings management (Xie et al., 2003; Klein, 2002; McMullen and Raghundan, 1996). The results of the Pearson's Correlation Matrix support the notion that executive share ownership should be viewed with caution since it might create opportunistic incentives for managers (Beatty and Zajac, 1994; Bergstresser and Philippon, 2006). Table 2, Panel B, reports the correlations for the differences in board and audit committee independence, audit committee meetings and executive directors' shareholdings.

Insert Table 2 here

Table 3 Panel A reports the results of testing the association between the governance variables and PACDA in the year 2000, before the governance reforms, and 2005, after the governance reforms. The results of testing H1(a) suggest that the proportion of non-executive directors on the board is negatively and significantly related to PACDA in 2005. The model explains 29.3% of the variability in PACDA for the year 2005, and shows that the proportion of non-executive

directors is negatively and significantly associated with the PACDA with a negative coefficient of -0.634 ($t = -3.341$). This variable is not significant in the model for the year 2000. Prior research has produced conflicting results about the relationship between PACDA and board independence. The results of this study demonstrate that, post-governance changes, as the proportion of non-executive directors on the board increases, performance-adjusted discretionary accruals decrease. This result supports the notion that boards of firms with high independence ensure financial reporting quality because they monitor managers more efficiently. This result supports and strengthens the results reported by prior research (i.e., Agrawal and Chadha, 2005; Beasley, 1996; Dechow et al., 1996; Persons 2006). The control variables LOSS and ROA are negatively and significantly related to PACDA in the 2005 model but only ROA is significant in the 2000 model.

The results of testing H2(a) suggests that PACDA is positively related to the executive directors share ownership in 2005 only. The association is not significant in the year 2000. The model has an adjusted R^2 of 30.4% and shows that executive directors' share ownership is positively and significantly associated with PACDA with a coefficient of 1.109 ($t = 4.567$). Prior research also suggests that management share-ownership exhibits a non-linear function (Morck et al., 1998). Increases in the executive share ownership provides incentives for executives to act less opportunistically and more in the interest of the firm, while excessive share ownership provides managers with the voting power to pursue their own interests (Hermalin and Weisbach 1991). Consistent with the Morck et al, (1998) entrenchment argument, the percentage of director share ownership was logged to test for a non-linear relationship between the dependent and independent variables. However, a non-linear relationship was not identified. The results presented in this study support and strengthen the results reported by other researchers who argue

that executive share ownership should be viewed with caution since it can have undesirable risk-bearing properties and it might create incentives for managers to behave opportunistically (e.g. Beatty and Zajac, 1994; Bergstresser and Philippon, 2006).

The two proxies for audit committee effectiveness, audit committee independence (H3(a)) and the frequency of audit activity (H3(c)) are tested separately. The results reported in Table 3 Panel A support Hypothesis 3(a) in 2005 only. The 2005 model has an adjusted R^2 of 29.8% and illustrates that the proportion of non-executive directors on the audit committee is negatively and significantly associated with the PACDA with a coefficient of -0.634 ($t = -4.380$). This variable is not significant in the model for the 2000 year. This result supports the notion that, post the governance changes, the ability of the audit committee to detect earnings management is associated with the level of independence, supporting and strengthening prior research (Bédard et al., 2004; Klein, 2002; McMullen and Raghunandan 1996; Peasnell et al., 2006). The control variables LOSS and ROA are negatively and significantly related to PACDA in both years. The results of testing the second proxy for audit committee effectiveness, the number of audit committee meetings, is negatively and marginally related to PACDA ($t = -1.701$; $p = 0.091$) in 2005 with an adjusted R^2 of 24%. The association is not significant in 2000. The results fail to support H3(c). The control variables LOSS and ROA are negatively and significantly related to PACDA in 2005.

The first set of regressions test whether the individual governance practices impact earnings management. The full model tests whether board independence, executive directors' shareholdings, audit committee independence, and audit committee meeting frequency simultaneously influence earnings management. The full model examines which of the governance factor(s) has the most explanatory power in predicting PACDA in 2000 and 2005.

The results of testing the full model reported in Table 3 Panel A, shows that two of the corporate governance practices are significantly related to PACDA in 2005 only. The model explains 35% of the variability in PACDA, and demonstrates that the proportion of non-executive directors on the audit committee is negatively and significantly associated with the PACDA with a coefficient of -0.504 ($t = -3.242$). The model also indicates that executive directors' share ownership is positively and significantly associated with the PACDA with a coefficient of 0.883 ($t = 3.474$). The control variables ROA and LOSS are negatively and significantly and SIZE is positively and significantly related to PACDA in 2005.

Table 3 Panel B reports the results of examining the levels of PACDA for firms that change their governance practices following the governance reforms. The results of testing H1(b) demonstrate that the level of PACDA is significantly negative for firms that increase the proportion of non-executive directors on the board with a negative coefficient of -0.679 ($t = -3.657$). The model has an adjusted R^2 of 6.7%. The results support the proposition that firms that changed their board structure following the governance reforms have less earnings management. The results of testing H2(b) suggest that the change in the executive directors' share ownership remains positively and significantly related to PACDA with a coefficient of 0.968 ($t = 3.995$). The model with an adjusted R^2 of 8% shows that when firms change the level of executive director ownership post the reforms they have larger discretionary accruals. The control variable, LOSS, is positively and significantly related to PACDA. The results do not support hypothesis 3(b) and 3(d) that PACDA is negatively related to changes in the proportion of non-executive directors on the audit committee or increases the number of audit committee meetings.

The results of testing the full model of differences are reported in Table 3 Panel B and suggest that changes to two of the corporate governance practices are significantly related to PACDA. The model, with an adjusted R^2 of 11.1%, indicates that changes to the proportion of non-executive directors on the board is negatively and significantly associated with the PACDA with a coefficient of -0.625 ($t = -3.105$). The model also shows that changes to executive directors' share ownership is positively and significantly associated with PACDA with a coefficient of 0.842 ($t = 3.424$). The control variable LOSS is positively and significantly related to PACDA.

4.2 Sensitivity Analysis

An additional test of the robustness of the results is performed using the pooled sample for 2000 and 2005 including a dummy variable for year. The results remained consistent with those reported in Table 3. Further analysis of the effect of audit committee meeting frequency tests the reported results. Whether the firm has the recommended number of meetings rather than the maximum number of meetings is relevant. It is not obvious that the maximum number of meetings reflect a well governed firm. When a firm is in crisis, the frequency of meetings is likely to increase. As a sensitivity test, we include a dummy variable equal to 1 if the firm holds up to 4 meetings, 0 otherwise, to consider this issue. However, the results remain insignificant.

5. Conclusion

The association between firms' corporate governance practices and earnings management is examined in this study. The research involves two considerations. First, whether specific corporate governance practices are associated with lower levels of earnings management in 2000

or 2005. Second, whether improvements in specific corporate governance practices between 2000 and 2005 are associated with lower levels of earnings management. First, consistent with prior research, the research findings suggest that, both the level of board independence and audit committee independence improves the quality of financial reporting. In addition, the results of the study support the stream of agency theory research that argues that increasing executive shareholdings imposes greater risk on the agent and therefore provides the incentive to act opportunistically, that is, to manage earnings. We failed to detect a significant relationship between the frequency of audit committee meetings and performance-adjusted discretionary accruals.

Second, the study shows that, subsequent to the reforms, board and audit committee independence improved and the number of audit committee meetings increased significantly. However, only changes to board independence, is associated with lower levels of performance-adjusted discretionary accruals. Increasing the independence or activity of the audit committee is not associated with performance-adjusted discretionary accruals. However, the previously reported result demonstrates a significantly negative association between audit committee independence and PACDA, suggesting that audit committee independence is important in detecting earnings management.

Complementing agency theory literature on the association between ownership and earnings management, this research finds evidence that increasing executive share ownership provides incentives to manipulate earnings regardless of governance reforms. This result suggests that there should be limitations placed on the level of executive director ownership to mitigate the incentives to manipulate earnings.

This study is subject to limitations. As the sample covers only two years of data the results may not be generalisable to different time periods. The sample is based on companies that continue to operate from 2000 to 2005. Accordingly, delisted companies and also bankrupt companies are not included in the sample set. Other proxies for board and audit committee effectiveness, such as financial literacy and responsibilities of board and committee members, may show further significant associations with earnings management. These limitations provide fruitful avenues for future research.

APPENDIX 1

Calculation of performance-adjusted current discretionary accruals (PACDA)

As suggested by Kothari et al. (2005) the cross-sectional performance-adjusted current discretionary accruals (PACDA) are calculated by including the lagged variable of Return on Asset (ROA).

The parameters for calculation of expected current accruals (ECA) are estimated by using the following equation:

$$\frac{TCA_{it}}{AT_{it-1}} = a_0 \left(\frac{1}{AT_{it-1}} \right) + a_1 \left(\frac{\Delta REV_{it}}{AT_{it-1}} \right) + a_2 (ROA_{it-1}) + \varepsilon_{it} \quad (1)$$

The expected current accruals (ECA) use the estimated parameters as follows:

$$\frac{ECA_{it}}{AT_{it-1}} = a_0 \left(\frac{1}{AT_{it-1}} \right) + a_1 \left(\frac{\Delta REV_{it} - \Delta AR_{it}}{AT_{it-1}} \right) + a_2 (ROA_{it-1}) \quad (2)$$

$$PACDA = (1) - (2)$$

TCA = total current accruals is net income (earnings before extraordinary items and discontinued operations) plus depreciation and amortisation minus operating cash flows for firm i in the year t;

ΔREV = change in net revenue for firm i in the year t;

ΔAR = change in accounts receivable for firm i in the year t;

ROA = Ratio of Net income before extraordinary items to total assets for firm i in the year t-1;

AT = total assets for firm i in the year t;

ε_{it} = error term for firm i in year t;

$$PACDA = \left(\frac{TCA_{it}}{AT_{it-1}} - \frac{ECA_{it}}{AT_{it-1}} \right) \text{ Kothari et al. (2005) and Ashbaugh et al. (2003)}$$

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Table 1

Descriptive statistics: N = 200

	PACDA_05	PACDA_00	PBNED_05	PBNED_00	PANED_05	PANED_00	NACM_05	NACM_00	SIZE_05 \$M	SIZE_00 \$M
Mean	0.0223	0.0353	0.7471	0.7178	0.9358	0.8403	3.6380	2.695	2434.73	1781.51
Median	0.0094	0.0132	0.7778	0.7500	1.0000	1.0000	3.6000	3.0000	537.55	265.22
Std. Dev.	0.5114	0.1658	0.1695	0.1827	0.2185	0.3115	1.4665	1.7473	7602.15	437.36
Minimum	-1.3858	-0.6839	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.81	3.68
Maximum	6.8114	1.0352	1.0000	1.0000	1.0000	1.0000	9.0000	11.0000	71614.51	65585.00
t-Stat	-0.3207		2.2405		4.1653		6.5030		3.8879	
p-value (1-tail)	0.3743		0.0130		0.0000		0.0000		0.00001	
	GEARING_ 05	GEARING_ 00	GROWTH_ 05	GROWTH_ 00	LOSS_05	LOSS_00	ROA_05	ROA_00	EDs SHARES_ 05	EDs SHARES_ 00
Mean	0.4376	0.4585	2.3452	2.4628	0.1750	0.2000	0.0058	0.0329	0.0509	0.0613
Median	0.2649	0.3476	1.8550	1.4350			0.0623	0.0580	0.0012	0.0020
Std. Dev.	1.3811	0.9459	1.9992	2.8181			0.2885	0.1539	0.0090	0.0090
Minimum	-2.3054	-1.7060	-6.7500	0.1900	0.0000	0.0000	-2.2745	-1.1972	0.0000	0.0000
Maximum	12.1291	7.9583	16.4900	17.9000	1.0000	1.0000	0.3045	0.2844	0.6700	0.6240
t-Stat	-0.2088		-0.5850				-1.5609		-1.0165	
p-value (1-tail)	0.4174		0.2796				0.0600		0.1553	

Notes: PACDA = absolute value of performance-adjusted current discretionary accruals based on Kothari et al. (2005). PBNED= percentage of Non executive board directors to total directors on the board.PANED = percentage of Non-executive directors on the audit committee (AC). NACM = Number of audit committee meetings per annum. EDs SHARES = the total number of ordinary shares held by the executive directors divided by the total number of issued ordinary shares. SIZE = Natural log of total assets in million dollars. LOSS = Dummy variable as: 1: income is <0; 0: otherwise. GROWTH = ratio of the firm's market value of common equity to book value of common equity at the beginning of the year. GEARING = (Short term debt + long term debt - cash) / shareholders equity. ROA = Earnings before interest / (total assets less outside equity interests).

Table 2
Pearson Correlation Coefficients

Panel A N = 400	PACDA	PBNED	EDs SHARES	PANED	NACM	LNSIZE	GEARING	GROWTH	LOSS	ROA	YEAR
PACDA	1.000										
PBNED	-0.224**	1.000									
EDs SHARES	0.240**	-0.326**	1.000								
PANED	-0.172**	0.402**	-0.149**	1.000							
NACM	-0.101*	0.274**	-0.098*	0.472**	1.000						
LNSIZE	-0.062	0.174**	-0.203**	0.228**	0.316**	1.000					
GEARING	0.110*	-0.015	-0.018	-0.015	0.019	0.166**	1.000				
GROWTH	0.110*	-0.045	-0.014	0.030	0.036	-0.031	0.024	1.000			
LOSS	0.046	-0.054	0.005	-0.128**	-0.086*	-0.441**	0.062	0.098*	1.000		
ROA	-0.342**	0.105*	-0.051	0.105*	0.095*	0.423**	-0.094*	-0.114*	-0.551**	1.000	
YEAR	0.017	-0.083*	0.042	-0.175**	-0.269**	-0.078	0.009	0.024	0.032	0.059	1.000
Panel B N = 200	PACDA	DIFNACM	DIFPBNED	DIFPANED	DIFEDs	LNSIZE	GEARING	GROWTH	LOSS	ROA	
PACDA	1.000										
DIFNACM	-0.041	1.000									
DIFPBNED	-0.252**	0.152*	1.000								
DIFPANED	-0.028	0.347**	0.343**	1.000							
DIFEDs	0.265**	0.007	-0.216**	-0.148*	1.000						
LNSIZE	-0.017	-0.048	-0.087	-0.062	-0.041	1.000					
GEARING	-0.030	-0.086	-0.021	-0.016	-0.043	0.098	1.000				
GROWTH	-0.051	0.060	0.063	0.014	0.012	0.046	0.105	1.000			

LOSS	0.145*	-0.006	0.044	0.046	-0.013	-0.490**	0.112	0.004	1.000	
ROA	-0.025	-0.044	-0.090	-0.118*	-0.043	0.468**	-0.134*	-0.097	-0.572**	1.000

Notes: ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). PACDA = absolute value of performance-adjusted current discretionary accruals based on Kothari et al. (2005). PBNED= percentage of Non-executive board directors to total directors on the board. PANED = percentage of Non-executive directors on the audit committee (AC). NACM = number of audit committee meetings per annum. EDs SHARES = the total number of ordinary shares held by the executive directors divided by the total number of issued ordinary shares. SIZE = natural log of total assets in million dollars. LOSS = dummy variable as: 1: income is <0; 0: otherwise. GROWTH= ratio of the firm's market value of common equity to book value of common equity at the beginning of the year. GEARING= (short term debt + long term debt - cash) / shareholders equity. ROA= earnings before interest / (total assets less outside equity interests). YEAR = dummy variable, 1 if year is 2000; 0 if year is 2005. DIFPNED= the difference in the proportion of non-executive board directors calculated as the proportion of non-executive directors on the board in 2005 - the proportion of non-executive directors on the board in 2000. DIFPANED = the difference in the proportion of non-executive audit committee directors calculated as the proportion of non-executive directors on the AC in 2005 - the proportion of non-executive directors on the AC in 2000. DIFNACM = the difference in the number of audit committee meetings per annum in 2005 compared with 2000. DIFEDs = the difference in the total number of ordinary shares held by the executive directors divided by the total number of issued ordinary.

Table 3
Regression Model: Dependent Variable: PACDA
N = 200

PANEL A		H1a 2000	H1a 2005	H2a 2000	H2a 2005	H3a 2000	H3a 2005	H3c 2000	H3c 2005	Full Model 2000	Full Model 2005
Variable		Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)
CONSTANT	?	0.258 (1.728)	-.051 (-0.131)	0.172 (1.095)	-0.664 (-1.754)	0.231 (1.549)	-0.041 (-0.108)	0.241 (1.605)	-0.489 (-1.235)	0.233 (1.438)	-0.257 (-0.632)
PBNED	-	-0.094 (-1.441)	-0.634 (-3.341)**							-0.110 (-1.458)	-0.218 (-1.102)
EDs SHARES	+			0.110 (1.159)	1.109 (4.567)***					0.082 (0.843)	0.883 (3.474)***
PANED	-					0.000 (-0.009)	-0.634 (-4.380)***			0.020 (0.430)	-0.504 (-3.242)***
NACM	-							0.003 (0.513)	-0.041 (-1.701)	0.005 (0.674)	-0.006 (-0.234)
SIZE	+	-0.008 (-1.011)	0.031 (1.630)	-0.007 (-0.932)	0.036 (1.900)*	-0.010 (-1.290)	0.037 (1.968)*	-0.011 (-1.409)	0.037 (1.772)	-0.008 (-0.947)	0.048 (2.471)**
GEARING	?	0.002 (0.138)	0.028 (1.215)	0.003 (0.260)	0.024 (1.055)	0.003 (0.237)	0.031 (1.351)	0.004 (0.279)	0.030 (1.254)	0.003 (0.245)	0.024 (1.106)
GROWTH	?	-0.004 (-0.956)	-0.017 (-1.081)	-0.003 (-0.791)	-0.018 (-1.197)	-0.003 (-0.800)	-0.016 (-1.029)	-0.003 (-0.791)	-0.016 (-0.972)	-0.004 (-0.966)	-0.013 (-0.875)
LOSS	?	-0.007 (-0.184)	-0.217 (-2.043)*	-0.002 (-0.042)	-0.218 (-2.107)*	-0.003 (-0.084)**	-0.289 (-2.801)**	-0.002 (-0.065)	-0.239 (-2.194)*	-0.005 (-0.132)	-0.219 (-2.123)*
ROA	?	0.236 (2.428)*	-0.975 (-6.902)***	0.245 (2.528)**	-1.018 (-7.499)***	0.258 (2.663)**	-1.029 (-7.562)***	0.263 (2.708)**	-1.040 (-7.304)***	0.233 (2.372)*	-0.959 (-7.159)***
F-value		2.298*	13.320***	2.168*	15.481***	1.931	15.108***	1.977	11.478***	1.713	12.907***
Adjusted R ²		0.038	0.293	0.034	0.304	0.027	0.298	0.029	0.240	0.031	0.350

PANEL B		H1b	H2b	H3b	H3d	Full Change Model
Variable		Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)	Coefficient (t-Statistic)
CONSTANT	?	-0.248 (-0.574)	-0.342 (-0.766)	-0.333 (-0.746)		-.306 (-0.723)
DIFPBNED	-	-0.697 (-3.657)***				-0.625 (-3.105)***
DIFEDs SHARES	+		0.968 (3.995)***			0.842 (3.424)***
DIFPANED	-			-0.043 (-0.382)		0.156 (1.309)
DIFFNACM	-				-0.009 (-0.507)	-0.009 (-0.523)
SIZE	+	0.013 (0.626)	0.020 (0.955)	0.018 (0.797)	0.017 (0.785)	0.016 (0.768)
GEARING	?	-0.021 (-0.785)	-0.014 (-0.524)	-0.018 (-0.674)	-0.019 (-0.707)	-0.017 (-0.652)
GROWTH	?	-0.007 (-0.417)	-0.012 (-0.692)	-0.011 (-0.619)	-0.011 (-0.587)	-0.008 (-0.461)
LOSS	?	0.277 (2.362)**	0.309 (2.654)**	0.285 (2.352)*	0.284 (2.342)*	0.300 (2.617)**
ROA	?	0.065 (0.418)	0.130 (0.838)	0.091 (0.563)	0.094 (0.582)	0.116 (0.757)
F-value		3.377**	3.823**	1.099	1.118	3.768***
Adjusted R ²		0.067	0.078	0.003	0.004	0.111

Notes: *** Significant at the 0.001 level; **significant at the 0.01 level; * significant at the 0.05 level. Note: The variance inflation factor (VIF) values are less than 2, therefore there does not appear to be a problem with multicollinearity in the models. PACDA = absolute value of performance-adjusted current discretionary accruals based on Kothari et al. (2005). PBNED = percentage of Non-executive board directors to total directors on the board. DIFPBNED = the difference in the proportion of non-executive board directors calculated as the proportion of non-executive directors on the board in 2005 - the proportion of non-executive directors on the board in 2000. PANED = percentage of Non-executive directors on the audit committee. DIFPANED = the difference in the proportion of non-executive audit committee directors calculated as the proportion of non-executive directors on the AC in 2005 - the proportion of non-executive directors on the AC in 2000. NACM = number of audit committee

meetings per annum. DIFNACM = the difference in the number of audit committee meetings per annum in 2005 compared with 2000. EDs SHARES = the total number of ordinary shares held by the executive directors divided by the total number of issued ordinary shares. DIFEDs = the difference in the total number of ordinary shares held by the executive directors divided by the total number of issued ordinary. SIZE = natural log of total assets in million dollars. LOSS = dummy variable as: 1: income is <0; 0: otherwise. GROWTH = ratio of the firm's market value of common equity to book value of common equity at the beginning of the year. GEARING= (short term debt + long term debt - cash)/shareholders equity. ROA = earnings before interest/(total assets less outside equity interests).

Notes

¹ As a consequence of CLERP 9, subsection 232(2) of the Corporations Law was rewritten to capture the fiduciary principles of a director and imposes both criminal and civil consequences for a breach of that duty.

² CLERP 9, section 295A requires the CEO and CFO to sign a declaration stating that the financial records have been properly maintained, they are prepared in accordance with accounting standards and they present a true and fair view of the company's financial standing. Subsequently, under section 295(4)(e) directors must state that they have received the financial statements from the CEO and CFO and they have to provide necessary information to ensure that financial statements give a true and fair view of the financial position and performance under sections 298 (1A) and 306 (2) (a) (b).

³ The model is estimated separately for each combination of the industry code (GICS) and year to obtain industry-specific estimates of the coefficients in the equation.