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An exploratory analysis of earnings management practices in Australia and New Zealand

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An Exploratory Analysis of Earnings Management Practices in Australia and New Zealand

Abstract

Purpose

This study explores corporate earnings management practices in Australia and New Zealand before and after the regulatory changes and corporate governance reforms. We argue that the effectiveness of regulatory reforms has to be reflected in constraining earnings management in post-reform period as compared to pre-reform period.

Design/methodology/approach

Using a sample of 3,966 firm-year observations including all ASX and NZX listed firms for the period 2001 to 2006, we examine earnings management practices in both countries in pre-reform and post-reform periods with appropriate statistical methods.

Findings

Our results indicate some interesting phenomenon that the magnitude of earnings management did not decline after the governance reform, as a positive time trend is observed in the entire sample as well as Australian and New Zealand sub-samples suggesting that earnings management has been growing over time. Additional test indicates a structural change has occurred in earnings management practice before and after the new regulations. A shift in behaviour is noticeable, as firms tend to engage in downward earnings management (income decreasing) in pre-reform periods while moved to upwards earning management (income increasing) in post-reform periods. Managers are more likely to show smooth and growing earnings string to prove that firm performance has benefited from the reform and convince investors the better shaped and improved financial performance after the regulatory change.

Research Limitation/implications

The sample of the study is limited to six-year periods to compare between three-year each in pre-reform and post-reform period.

Practical implications

The shifting of earnings management behaviour from income decreasing to income increasing can be interpreted as the outcome of more ‘informative’, rather than ‘deliberate’, earnings management in a more transparent disclosure regime to capture short-run benefits of regulatory reforms, which is worth to further investigation. The findings of the study can lead regulatory authorities taking appropriate measures to promote earnings quality in corporate financial reporting from a long-run decision usefulness context. Any future reforms should be directed to protecting the interest of stakeholders as well as ensuring benefits outweighing costs for them.

Originality/value

The study adds value to the existing earnings management literature as well as effectiveness of regulations for the benefit of wider stakeholder groups.

Keywords: Accounting disclosure, Corporate governance reforms, Earnings management, Australia and New Zealand

Article classification: Research Paper

1. Introduction

The issue of corporate governance has received much attention throughout the world since early 2000's when almost every country has been trying to implement good corporate governance practices in its corporate sector. Resulting from a series of corporate collapses, scandals and frauds in leading OECD countries in recent years including Enron, Tyco International, WorldCom, Xerox (US), BCCI bank (UK), HIH Insurance, OneTel, Westpoint, Harris Scarfe, Centaur and Pasminco (Australia), Ansett Holdings, Air New Zealand (NZ), Nortel, Crocus (Canada), Royal Ahold, Parmalat (EU), prior studies raised concerns about the weak and ineffective corporate governance structure in the firms (Elloumi and Gueyle, 2001; Shen and Chih, 2007; Cormier and Martinez, 2006; Jo and Kim, 2007) as well as the quality of the accounting information reported and disclosed in various company financial statements (Agrawal and Chadha 2005; Adams, 2011). This debate prompted regulatory authorities undertaking a range of corporate governance reforms including disclosure transparency of financial and non-financial reporting (Plessis et al., 2005). Such waves of reforms developed high expectations about effective governance structure and disclosure regime to deter managerial self-dealing incentives and low quality earnings and disclosure to minimise agency costs. Corporate governance and disclosure are monitoring tools that operate within a firm's governance system and seem to be potentially useful in reducing information asymmetry as well as agency costs (Shleifer and Vishny, 1997; Hope and Thomas, 2008; Holm and Schøler, 2010; Arcot and Bruno, 2011).

Earnings management (both opportunistic and informative) is widely perceived as a means of distorting or manipulating accounting earnings to benefit managers at the expense of shareholders. Earnings management is one form of agency cost (Davidson et al., 2004) that leads

to earnings mispricing by the market players and, consequently, misrepresenting the capital market's information. Agency theory highlights a variety of agency costs that provide incentives for earnings management to agents (managers) and controlling owners at the cost of principals (owners) and non-controlling investors, respectively due to divergence of interests between them leading to non-stewardship behaviour and asymmetric information problem (Jensen and Meckling, 1976; Fama and Jensen, 1983b; Shleifer and Vishny, 1997). In fact, the use of financial information, such as reported earnings, in managerial contractual agreements may provide incentives for earnings management (Healy and Wahlen, 1999). Managers may tend to manipulate earnings for a number of reasons including those related to capital market motivations, compensation and bonus as well as debt or lending contracts that are determined by a company's earnings performance (Gaver and Gaver, 1998; Steven, 1998; Jaggi and Lee, 2002; Shuto, 2007; Teshima and Shuto, 2008). Fields et al. (2001) contend that earnings management occurs when managers exercise their discretion over accounting numbers, with or without GAAP restrictions. Despite the opportunistic behaviour, managers could also exercise discretion in order to reveal to investors their private expectations about the firm's future cash flows (Healy and Palepu, 1993).

High quality of disclosure and earnings is of value in corporate sector. However, the presence of earnings management can lead to lower quality of disclosure and earnings. While the absence of earnings management confers earnings quality, the intentional manipulation of earnings by managers, within the requirements of GAAP, can compromise earnings persistence and predictability and therefore, distort the usefulness of earnings in decision making. To overcome this problem of earnings manipulation and mitigate agency costs effective monitoring mechanisms such as corporate governance is installed within the firm (Shleifer and Vishny,

1986). It is perceived that corporate governance mechanisms can alleviate agency problems and restore the confidence of investors in companies' financial reporting practice (Leng, 2004). In a similar vein, prior studies argue that firms' strong disclosure transparency and corporate governance create disincentives for managers to commit earnings management (Cormier and Martinez, 2006; Jo and Kim, 2007; Shen and Chih, 2007). To address regulatory weaknesses, it is evident that most of the leading countries including Australia and New Zealand streamlined a set of corporate governance code of best practices, international financial reporting standards (IFRSs), corporation act, and bank and financial sector reforms etc. to embark up to the international standard during the first half of last decade. Given the regulatory and legislation changes and international governance trends, the importance of good governance in continually being brought into focus in today's market, and companies are required to hold their governance practices up for public scrutiny. This entails the expectation of more transparent and reliable financial information to investors by constraining earnings management and thus ensure high quality earnings free from fraud or real activities manipulation and showing a true and fair view of a company's financial performance that conform to the spirit of regulatory bodies in protecting all parties' interest. Companies are also benefited in instilling confidence in their shareholders, investors and other stakeholders. However, the case in real business world may be different contrary to the expectations in curbing earnings management and ensuring high quality earnings.

The motivation of this paper is to examine how successful the regulatory reforms have been in relation to a specific outcome of management discretion, as we argue that the ability and enforcement of corporate governance to constrain earnings management as evidence of the effectiveness of the regulatory reforms. In particular, the aim is to explore earnings management

behaviour of Australian and New Zealand listed companies before and after the corporate governance and disclosure reforms, and observe positive change in earning management magnitude in post-reform periods than pre-reform periods as per expectation of reform agenda. Managers engage in both directions' earnings management depending on firm-specific circumstances. Further, we review the Australian studies of earnings management for the period from 1998 to 2011. Earnings management evidences have been documented in the setting of income-smoothing (Black et al., 1998); price control and political concerns (Lim and Matolcsy, 1999; Godfrey and Jones, 1999; Monem, 2003); takeover (Eddey and Taylor, 1999); CEO changes (Wells, 2002; Godfrey et al., 2003); benchmark beating (Holland and Ramsay, 2003; Coulton et al., 2005); corporate governance and Institutional investor type (Koh, 2003; Hsu and Koh, 2005; Davidson et al., 2005; Koh, 2007); economic setting of Australia's 'Old' and 'New' economies (Jones and Sharma, 2001); banking industry (Anandarajan et al., 2007); earnings restatements (Ahmed and Goodwin, 2007); earnings management in Australian corporations (Wilson, 2011). The review of Australian research not only shows that research on earnings management is limited within the Australian context, but also reveals the gaps within existing studies. For example, the impact of CLERP 9 on earnings management behaviour has not yet been well examined in the Australian context.

Corporate collapse, scandals and frauds are not seen uncommon in recent years in both Australia and New Zealand like their peers in the United States and the Europe that destroyed billions of dollars in shareholders/stakeholders' capital. In 2002, the Sarbanes-Oxley Act (SOX) was introduced in the wave of corporate governance failures in the US market. Cohen et al. (2008) investigate whether the passage of SOX has affected earnings management practices in the US and suggest that the practice of earnings management has increased over the sample

period from 1987 to 2005. They find an increase in earnings management in the period before the introduction of SOX; after the introduction of SOX the level of accrual-based earnings management declined, however the level of real earnings management increased significantly. Benchmarks beating continued to be important to managers, what has changed is that managers used more real earnings management to beat last year's earnings, to avoid losses, to meet consensus analysts' forecasts, and ultimately to inflate executive equity-based compensation. In the Australian context, CLERP 9 was introduced after the collapse of HIH insurance company and other high profile accounting failures. Given CLERP 9 is to improve financial reporting quality, one would expect a decline in earnings management behaviour after the introduction of CLERP 9 in 2002 and enactment in 2004.

However, to our best knowledge the effect of CLERP 9 on earnings management whether this new law has constrained managers' opportunistic behaviour is not studied. In fact, Wilson (2011) reviews the Australian studies published between 1999 to 2010, suggesting earnings management evidences in Australia are find in the period of CEO turnover; when companies are making losses; during the introduction of the Gold Tax in 1991; and changes in the rate of exercise levied on the production of beer between 1910 and 1965. As such, this study is an attempt to fill in this gap, through investigating the periods immediately surrounding the passage of CLERP 9 we intend to provide a better understanding on whether the corporate governance reforms are effective in constraining earnings management behaviour and thereby improving the quality of accounting information. The answer to this question will be of interest to scholars, policy makers, standard setters and general investors.

This study suggests that managers reduce earnings before the introduction of corporate law and economic reform program, companies with high reported earnings may be targeted by the

regulators and attracted more public inquiry during the reform movement and therefore managers would have incentive to engage in downward earnings management to reduce such political exposure. We also find that subsequently following the reform action, managers are more likely to show a smooth and growing earnings string to prove that firm performance has benefited from the reform, specifically, with a strong investor protection and high level of transparency in financial reporting and disclosure and high level of independence given to audit, investors should have more confidence in investing in firms than ever. As such, upward earning management severs a role of information signalling in the period after the introduction of corporate law and economic reform program to convince investors the better shaping and improved financial performance after the regulatory change. Because, this study argues that the credible way to observe how investors' interest are protected in different countries and in different regulatory regimes is to test some indicators of managerial discretion that may vary with particular set of corporate governance code in place. Leuz et al. (2003) confer private control benefits to insiders at the expense of outsiders in weak governance environment after finding that the earnings management varies across countries with the levels of investor protection. To this end we choose to investigate the extent of earnings management as an outcome of comparative effectiveness of corporate governance practices in Australia and New Zealand. Earnings management is selected as a proxy for agency cost because the extant literature is unequivocal that earnings manipulation declines as corporate governance environment improves in a particular country (Beasley, 1996; Chtourou et al., 2001; Peasnell et al., 2005).

The paper is structured as follows: Section 2 focuses on institutional background of the countries concerned; Section 3 develops hypotheses based on literature review; Section 4 discusses research method and data selection process; Section 5 summarizes descriptive statistics;

Section 6 analyses empirical results; Section 7 performs additional sensitivity analysis and Section 8 concludes the findings of the study.

2. Institutional Background

With a Common Law judicial background, corporate governance environment in Australia and New Zealand is similar to the Anglo-Saxon system in the United States and United Kingdom. The governance structure has evolved with five main pillars, such as legal framework, internal control mechanism (board, management, shareholders), compensation contracts, external control mechanism (corporate control/takeover, securities regulators, governance codes and security market participants including market analyst) and debt covenants. In the disperse ownership system and control, minority shareholders are well protected by the strong enforcement of judiciary system and other regulatory frameworks in place (e.g. Australian Corporation Act 2001, Principles of Good Corporate Governance and Best Practice Recommendations in 2003 and the Corporate Law Economic Reform Program Act 2004) where companies and investors communicate regularly through market forces. While both shareholders and creditors are the major supplier of funds, the company is usually controlled by a one-tier board of directors consisting of independent non-executive directors and company executives chosen by shareholders. As a practice, independent directors hold the main positions in the nomination, compensation and audit committees. As a result, managerial/corporate behaviours are closely monitored by independent directors. On one hand, financial market discipline including takeovers imposes a threat to poor performing companies and companies with poor analysts forecast. On the other hand, independent directors' scrutiny may result in dismissing underperforming CEOs/top executives. In regards to transparency and disclosure standards, accounting regulations governing financial reporting system are well equipped to ensure

accurate/true and fair and non-misleading information for public interest and positively contributing towards firms' capital structures, risk and credit management, and dividend policies.

Both internal audit and external auditors monitoring the company financial practices make sure accountability of management and board to shareholders, while shareholders are not deprived of useful information and right to view company register. In effect, companies protect the minority shareholders from being undermined by the majority shareholders or top management personnel.

Despite the institutional settings stated above, corporate collapse, scandals and frauds are not seen uncommon in recent years in both Australia and New Zealand like their peers in the United States and the Europe that destroyed billions of dollars in shareholders/stakeholders' capital. To address the weaknesses in corporate governance structure, a great deal of international attention has been paid in the last decade in evaluating existing corporate governance practices and then undertaking required regulatory reforms. Accordingly, SOX in the US in 2002 and Higgs Report in the UK in 2003 enacted, respectively, the Public Company Accounting Reform and Investor Protection Act in the US and Combined Code on Corporate Governance in the UK. The major push in corporate governance reform in Australia was initiated as a response to corporate collapses in the early 2000s. Australian Accounting Standards Board (AASB) and the requirements of the Corporations Act (2001), regulatory authorities such as ASIC and APRA have been increasingly tightening their reporting requirements in recent years, with more demanding rules about corporate disclosure (Kavanagh, 2003, p. 12) and corporate governance stimulating (or responding to) shareholders' demands for higher performance by boards, including audit boards. In particular, the first review was the setting up of the 'Royal Commission' in 2000 for an extensive evaluation of the processes of management, followed by

the second review in 2003 targeted large companies in providing guidelines which contained 10 essential Corporate Governance Principles and 28 Best Practice Recommendations.

Prior to this, in 2002, Australian Stock Exchange established the ASX Corporate Governance Council with members from 21 different business, industry and shareholder groups. In March 2003, the ASX Corporate Governance Council released its “Principles of good corporate governance and best practice recommendations” (Australian Stock Exchange, 2003) intended to provide a guide for listed companies. Highlighting on 3 major types of principles (such as, structural, behavioural and disclosure principles), the ASX’s Corporate Governance Guidelines offered companies an opportunity to establish themselves as legitimate public firms by highlighting their good corporate governance practices. Further, ASX Listing Rule 4.10.3 was introduced to comply by all listed companies from 1 January 2003 and in case of non-compliance of any recommendations, they are to provide explanation in the annual reports. While not mandatory, the principles were accompanied with an amendment to the ASX’s listing rule 4.10.3, which required companies to disclose, in the section of their report referring to corporate governance, the extent to which they had adopted the Council’s 28 recommendations (Australian Stock Exchange, 2005). Listing Rule required all companies in the All Ordinaries Index to satisfy the Best Practice Recommendations by having an audit committee consisting of at least 3 members, majority of independent directors, separated role for CEO and chairperson and disclosing code of conduct to guide compliance. These new recommendations constitute a frame of reference for company disclosure commonly known as the Principles of Good Corporate Governance and Best Practice Recommendations that also assist investors to understand company disclosure from comparative perspectives. However, these principles and recommendations do not endorse ‘one size fits all’, rather they leave room for non-adoption

based on a company's particular circumstances along with a suitable explanation. Again, in August 2007, the ASX Corporate Governance Council announced revised principles for 'Corporate Governance Principles and Recommendations' by including 8 of the previous 10 principles (amalgamated with other principles) and 27 of the previous 28 best practice recommendations to be effective from January 2008. These principles and recommendations were further amended in 2010 (The ASX Corporate Governance Council's Corporate Governance Principles and Recommendations with 2010 Amendments, www.asx.com.au, 2010).

Another reform program in corporate governance development in Australia was initiated at the Federal level since early 1997 as part of government's drive to promote business and employment, known as the Corporate Law Economic Reform Program (CLERP). CLERP 1-5 brought changes in accounting standards, raising external funds, e-commerce, obligations of directors, takeover bid etc. While CLERP 6 led to the Financial Services Reform Act 2001, CLERP 7 attached to reduction of overall compliance burden with ASIC and CLERP 8 with Cross-border Insolvency issue. Finally, CLERP 9 issued in 2003 focusing on corporate disclosures and audit reforms. In July 2004, CLERP 9 became an Act when Australia passed the legislation the Corporate Law Economic Reform Program Act 2004 to improve corporate governance, disclosure, audit quality, and auditor independence. As a result, a considerable part of the Corporation Act remains focused on mandatory corporate governance rules to encourage suitable decision making and incentive oriented corporate environment through deterring manipulative earnings management, fraudulent financial reporting and expropriation of firm resources.

Corporate governance reform in New Zealand has undergone significant changes in recent years starting with the major reform of the securities laws (e.g. Securities Amendment Act 1988,

Financial Reporting Act 1993, Takeover Act 1993) and Companies Act 1993 that expanded both governance and disclosure activities. The Companies Act 1993 provided the fundamental corporate governance framework for companies, codifying and expanding directors' duties and shareholders' rights. Corporate governance regime in New Zealand was in fact an amalgamation of statute, code and Common Law principles. However, responding to the heightened international awareness of corporate governance issues in early 2000s New Zealand regulatory authorities has prompted to review their current practices and procedures. These included the recent corporate governance-related changes to the Listing Rules and the corporate governance principles and guidelines released by the Securities Commission. New Zealand Stock Exchange (NZX) adopted a Corporate Governance Best Practice Code and several governance-related amendments to the NZX Listing Rules focusing on ensuring the independence of the board and audit committee of listed issuers.

During the period, legislative change also happened to insider trading with a new set of continuous disclosure rules for timely disclosure (i.e. Securities Market Amendment Act 2002, Securities Markets and Institutions Bill 2002). In June 2003, the Minister of Commerce asked the Securities Commission to develop corporate governance principles while in February 2004 the Securities Commission released 9 principles of corporate governance and finally introduced 'Corporate Governance Codes and Principles' in 2004. In 2004, NZX imposed changes in its listing rules and introduced the Corporate Governance Code of Best Practice to improve the governance and audit quality. The amendments to the NZX Listing Rules and the adoption of the Code were effective from October 2004. The Code sets out best practice for various corporate governance matters including the composition and operation of board committees, conduct of directors, director remuneration and codes of ethics. While compliance with the Code was not

made mandatory, listed issuers are required to disclose corporate governance principles adopted by them in their annual reports and whether these differ materially from those set out in the Code. Similarly, NZX listing rules also require listed companies to provide a statement of any corporate governance policies, practices and processes adopted or followed by them to be disclosed in their annual report. The Institute of Directors in New Zealand has issued a Code of Proper Practice for Directors and a series of best-practice statements, which contain guidelines for corporate governance structures.

The discussion above demonstrates several corporate governance regulatory changes occurred in Australia and New Zealand during the period of 2004. The introduction of these regulatory reforms were undertaken in the light of overseas experience of corporate malfeasance and corporate collapses in both countries, that resulted in the loss of billions of dollars of investors' funds, with a view of implementing stringent corporate governance and disclosure regime to protect investments. Moreover, regulatory reforms also continued after 2004 and more recently after the 2008 global financial crisis (GFC) to protect the economy, which is beyond the scope of this paper. Therefore, it is of interest to observe corporate earnings management behaviour in both countries, as an indirect measures of agency costs, in the 'Pre-Reform' and the 'Post-Reform' periods where 2004 is taken as the event period. This investigation is worthy to envisage/see whether a positive change in earnings management behaviour in companies reducing agency costs is achieved as per expectation of reform agenda in both countries.

3. Literature Review and Hypotheses Development

Prior studies have predominantly focused on the effects of various corporate governance instruments on earnings management. They argue that the incentives for managers to commit earnings management is dependent on the extent of a firm's disclosure transparency and

corporate governance (Shen and Chih, 2007; Cormier and Martinez, 2006; Jo and Kim, 2007). So, a firm's governance system is potentially useful for reducing information asymmetry and the agency costs (Shleifer and Vishny, 1997; Hope and Thomas, 2008; Holm and Schøler, 2010; Arcot and Bruno, 2011). Both internal (i. e. board of directors and audit committee) and external (i. e. disclosure) governance variables are expected to provide monitoring services to the firms (Jensen and Smith, 1985; Weir et al., 2003/2; Brown et al., 2011). Evidence also suggests that certain governance mechanisms might outperform other governance mechanisms in the system (Brick et al., 2008; Holm and Schøler, 2010), therefore, compliance with the corporate governance code may not be necessarily effective in curbing earnings management (Kent et al., 2010).

There are numerous studies on earnings management and corporate governance, but the majority of them are based on the US capital market. These studies include board and audit committee independence (Klein, 2002; Yang and Krishnan, 2005; Vafeas, 2005), frequency of board meetings (Xie et al., 2003; Vafeas, 2005), financial background (Xie et al., 2003), and independence between CEO and chairman (Klein, 2002; Saleh et al., 2005; Chau and Gray, 2010) etc. to document that high earnings management is systematically related to weakness in the corporate governance system. Specifically, Xie et al. (2003) document that board independence, audit committee expertise and a higher frequency of board meetings and audit committee meetings constrain managers to manipulate earnings. Bédard et al. (2004) report that audit committee independence, board independence and audit committee expertise reduce upward earnings management; while board size, ownership by non-executive directors, and more experienced members on the board reduce downward earnings management.

Osma (2008) and Habbash et al. (2010) record that independent director's roles are important in constraining earnings management. Dimitropoulos and Asteriou (2010) suggest that board independence is negatively correlated with discretionary accruals. Peasnell et al. (2000) report the presence of independent directors is able to mitigate earnings management in firms with negative earnings. Kao and Chen (2004), Jaggi et al. (2009) and Lo et al. (2010) also support similar findings. Benkel et al. (2006) reveal a negative link of board and audit committee independence with earnings management. Both Davidson et al. (2005) and Benkel et al. (2006) also report that board independence and audit committee independence provide stronger effect to mitigate earnings management.

Baxter and Cotter (2009) find that audit committee existence is essential in reducing earnings management. Chang and Sun (2009) also report that audit committee independence is significant in constraining earnings management post-SOX, but insignificant pre-SOX. Kent et al. (2010) find that audit committee characteristics (i.e. audit committee independence, audit committee meeting and audit committee members) outperformed board independence in constraining innate and/or discretionary accruals. Saleh et al. (2007) also confirm the effectiveness of audit committee characteristics in reducing earnings management practices. Bradbury et al. (2006) report similar evidence that audit committee independence and independent directors are related to mitigating abnormal accruals. García Lara et al. (2007) suggest that strong corporate governance promotes efficient monitoring by the board of directors that result in higher financial statement transparency, lower accounting manipulation, particularly in terms of lower income-increasing earnings management, constraints on the ability of managers to conceal bad news and greater independence of committees. Using government-score developed by Brown and Caylor (2006) as proxy for corporate governance, Jiang et al. (2008) find an inverse relationship between

government-score and discretionary accruals. Liu and Lu (2007) and Kang and Kim (2011) reveal that the corporate governance index reduces earnings management.

Other studies also document firms with less earnings management are more likely to have an audit committee (Dechow et al., 1996; Baxter and Cotter, 2009), a larger audit committee (Yang and Krishnan, 2005; Lin et al., 2006), a more independent audit committee (Abbott et al., 2004; Davidson et al., 2005; Bradbury et al., 2006), a greater audit committee financial expertise (Archambeault and DeZoort, 2001; Raghunandan et al., 2001; Krishnan, 2005), a higher quality external auditors (Chia et al., 2007; Teitel and Machuga, 2010), a higher proportion of outside independent directors (Jaggi and Tsui, 2007; Petra, 2007; Chau and Gray, 2010), a higher proportion of non-executive directors (Davidson et al., 2005; Peasnell et al., 2005), a smaller board (Yermack, 1996; Eisenberg et al., 1998; Vafeas, 2000; and Mak and Kusnadi, 2005), and a CEO who does not serve as the chairman of the board (Chau and Gray, 2010).

Another group of studies focuses on the impact of institutional settings such as the introduction of a code of corporate governance or new regulations and its impact on earnings management. Machuga and Teitel (2007) find that firms show improvement in abnormal accruals, income smoothing and timeliness of earnings after the implementation of the code in Mexico. They conclude that different reporting requirements and incentives faced by the firms influence the effect of Code of Corporate Governance on firms' earnings quality. Chang and Sun (2009) examine whether the provisions of SOX improve the effectiveness of corporate governance in monitoring the earnings quality and find that earnings management is negatively associated with the aggregate corporate-governance score, thus conclude that the effectiveness of firms' corporate governance in monitoring earnings management behaviour improved after the implementation of SOX.

On the contrary, some studies provide contradictory results with regard to the corporate governance mechanisms in curbing earnings management, thus suggesting that strong board governance is not always effective in constraining managers' propensity to manipulate earnings. As such, firms with sound corporate governance practices are also prone to earnings management problems. Park and Shin (2004) document that the composition of independent directors on the board is less important in constraining earnings management. Saleh et al. (2005) report that the ratio of independent board members is not significantly related to earnings management in firms with CEO-Chairman duality showing positive relation between earnings management and CEO-Chairman duality. Rahman and Ali (2006) also do not find any significant association between the independence of board or audit committee and accrual management. Similarly, Abdullah and Nasir (2004) find neither board independence nor the audit committee independence is significantly associated with firm's earnings management. Baxter and Cotter (2009) document that audit committee characteristics (e.g. audit committee independence, audit committee size and audit committee meeting) are insignificant in reducing manager's propensity to manipulate earnings. Piot and Janin (2007) and Osma and Noguer (2007) studies fail to find significant relationship between audit committee independence and earnings management. Chtourou et al. (2001) also fail to find any relationship between audit committee independence and earnings management. Zhao and Chen (2008) reveal that accruals are associated with a staggered board.

We also review most recently earnings management studies. Lee and Choi (2016) report a relationship between earnings management and the allowance for uncollectible accounts among Korean non-financial firms during the period from 2000 to 2012 and the results show that the allowance for uncollectible accounts has been used as a strategic tool to beat important

benchmarks, that is, avoid losses, sustain last year's earnings and meet analysts' forecasts. Alzoubi (2016) investigates Jordanian listed companies during the period from 2006 to 2013 and find that ownership structure is associated with lower earnings management. Liu et al. (2014) study the differences of earnings management practice existed in the two sets of accounting standards US GAAP and IFRS and suggest that while discretionary accruals is not significantly different between US GAAP and IFRS firms, IFRS firms tend to engage in more real earnings management through R&D. Wang et al. (2010) suggest that Taiwan-listed firms are generally loss avoidance and find that managers are more likely to avoid reporting losses by timing the sale of long-term assets and investments over the period of 1984 to 2006.

Despite above deviation in the literature, it provides a clear and unequivocal indication regarding the ability of corporate governance to constrain earnings management. Regulatory reforms and implementation of corporate governance code are also aimed to achieve this in protecting investors' interest. Therefore, the following research question (RQ) is developed for this paper:

Does earnings management differ before and after the regulatory changes in late 2003 and early 2004?

We predict that earnings management practices will be reduced after the corporate governance reforms. We are interested on the question whether the recent regulatory changes can improve the quality of financial reporting in relation to earning management behaviour. Accordingly, the hypotheses stated in the alternative form are:

H1: The governance reforms and regulatory changes reduced earnings management of Australian public firms.

H2: The governance reforms and regulatory changes reduced earnings management of New Zealand public firms.

4. Research Method and Data

4.1 Determine the Event period

We selected two countries for our study, Australia and New Zealand because these two countries are fairly homogeneous in their financial reporting environment and culture. Moreover, several corporate governance regulatory changes occurred in Australia and New Zealand during the same period. In 2004, Australia passed the legislation the *Corporate Law Economic Reform Program Act of 2004* (CLERP 9) to improve corporate governance, audit quality, and auditor independence. In the same year, New Zealand Stock Exchange (NZX) imposed changes in its listing rules and introduced the Corporate Governance Code of Best Practice to improve the governance and audit quality. This allows us to identify an event period and our objective is to investigate whether the corporate governance reform was accompanied by a decline in earnings management. The year of 2004 is defined as the event and we work on year 2001, 2002, 2003 as the ‘Pre-Reform’ period and 2004, 2005, 2006 as the ‘Post-Reform’ period. The determination of a 3 years before the reform and another 3 years after the reform is based on the data availability. It would be ideal to extend our sample size to test a 4 years or 5 years’ window, however, the data that we have determines the construction of the tests surrounding a 3 years’ window. Further, we think that companies/managers are more likely to react in the immediate year preceding and following the passage of CLERP 9; such a reaction can be strong in a short window and when the time is lapse any effect may be diluted in a relatively long run.

4.2 Measure of Earnings Management

A widely used proxy of earnings management is the discretionary accrual. Consistent with Dechow et al. (1995), we use the Modified Jones model to estimate discretionary accruals. Specifically, the Modified Jones model in a regression equation form is:

$$TA_{it} / A_{it-1} = \alpha_1 (1 / A_{it-1}) + \alpha_2 (\Delta REV_{it} / A_{it} - \Delta AR_{it} / A_{it-1}) + \alpha_3 (PPE_{it} / A_{it-1}) + \varepsilon_{it} \quad (1)$$

Where TA_{it} is total accruals being the difference between income before extraordinary items E_{it} and operating cash flows CF_{it} ; ΔREV_{it} is the change in net sales from period $t-1$ to t ; ΔAR_{it} is the change in account receivables from period $t-1$ to t ; PPE_{it} is net property, plant and equipment; i and t are indices for firms and time periods. All variables are deflated by lagged total assets, A_{it-1} to reduce heteroscedasticity. The magnitude of a firm's discretionary accruals is indicated as a percentage of the total assets of a firm.

Empirical studies have documented various approaches in detecting earnings management behaviour. The literature also reveals that most models used to estimate discretionary accruals suffer from the problem of model misspecification and the statistical results could be sensitive when different models are used in estimating discretionary accruals. Therefore, we employ several sensitivity tests to assess the robustness of the main results, particularly we re-estimate discretionary accruals by using Jones model which proposes the total accrual as a function of changes in revenue and levels of property plant and equipment in the sensitivity analysis and repeat all the tests to ensure that our findings are robust.

4.3 Determine Structural Change before and after New Regulations

Earnings management behaviour may change due to major corporate governance reform that occurred during the year of 2004. This includes the introduction of CLEPR 9 in Australia and the Corporate Governance Code of Best Practice in New Zealand. We perform a Chow test for structural stability on earnings management behaviour before and after the 2004 new regulations. The dependent variable is earnings management proxy (DA) and the independent variable is the time index ($TIME$), measured as the calendar year minus 2000. The Chow test is used to test for

the stability of a relationship between earnings management and the time index. We select the year 2004 as the potential breakpoint of the relationship that we desire to test. If there is no structural change, we would expect that the estimated residuals from one regression using the entire period data would be no difference from the combined residuals from two regressions using each subset of data covering Pre-Reform and Post-Reform periods. A large difference between the sets of residuals would indicate that there has been a break in the data, i.e. a structural change has occurred in earnings management practice before and after the new regulations. We control for size (*SIZE*), measured as log market capitalization; growth opportunity (*GROWTH*), measured by the change of sales between year *t* and *t-1* divided by total assets at year *t*; profitability (*PROFIT*) measured by net income divided by total assets; leverage (*LEVERAGE*), calculated as the sum of long term debt and short term debt divided by total assets; capital intensity (*CAPITAL*), measured as gross property, plant and equipment divided by total assets; all are summed as control variable (*CONTROL*).

$$\begin{aligned} DA_{it} &= \beta^1 + \phi^1 TIME + \gamma^1 CONTROL_{it} + \mu_{it}, & \text{for Pre-Reform Period} \\ DA_{it} &= \beta^2 + \phi^2 TIME + \gamma^2 CONTROL_{it} + \mu_{it}, & \text{for Post-Reform Period} \\ H_0 : \beta^1 &= \beta^2 \text{ and } \phi^1 = \phi^2 \end{aligned} \tag{2}$$

A linear regression model is estimated for earnings management for several time windows: the Pre-Reform period (2001 to 2003), the Post-Reform period (2004 to 2006), and the entire period (2001 to 2006). We test the null hypothesis of no difference in intercepts and slope coefficients in the two subset regressions of Pre-Reform period and Post-Reform period. Consistent with Chow (1960), we first estimated the equation over the entire sample period (2001-2006) which is the restricted regression and retrieve the residual sum of squared RSS_{entire} .

Second, we estimate the equation over two sub-periods, Pre-Reform (2001-2003) and Post-Reform (2004-2006), these are unrestricted regression and retrieve the residual sum of squared $RSS_{Pre-Reform}$ from the Pre-Reform sub-sample and $RSS_{Post-Reform}$ from the Post-Reform sub-sample.

We then calculate the Chow-statistic with F distribution ($k, n-2k$) degrees of freedom:

$$Chow = \frac{[RSS_{entire} - (RSS_{pre-reform} + RSS_{post-reform})]/k}{[(RSS_{pre-reform} + RSS_{post-reform})]/(n-2k)}$$

If the chow test is statistically significant, we can reject the null hypothesis that there is no structural change occurred in modeling earning management before and after the new regulations.

In fact, we can conclude that the intervention of the new law has changed the nature of the relationship between earnings management and the investigation horizon.

4.4 Data Selection and Sample Description

We collect Australian data from DataStream database including all ASX listed firms from the period of 2001 to 2006. New Zealand data is also collected from DataStream and OSIRIS databases with all NZX listed firms (total 791 firms) from the period of 2001 to 2006. The approach avoids the selection bias for 6 years' data from a range of industries resulted in an unbalanced panel dataset. These firms are affiliated in major industry sectors. To be selected in the sample, a company must be active or survive during the sample period; however, it is not necessary for a company to be included in all six years' period. To ensure that our results are not influenced by extreme outliers, we winsorize the top and bottom 1 per cent observations by extreme values of revenue and growth rate. The Australian final sample contains 3,543 firm-year observations and then is combined with New Zealand final sample of 423 firm-year observations which yields a final combined sample of 3,966 firm-year observations. We restrict our sample to

all nonfinancial firms with available data. Table 1 shows year-wise distribution of the sample. In general, the firm-year observations have steadily increased each year (from 7.03% in 2001 to 22.06% in 2006) and after the corporate reforms (from 38.05% in Pre-Reform period to 61.95% in Post-Reform period), indicating the improvement of the disclosure environment in both Australia and New Zealand with more companies disclosing their financial reports.

Table 1: Sample Distribution by Country and Year

Country	Pre-Reform			Post-Reform			Total
	2001	2002	2003	2004	2005	2006	
AUS	233	434	666	708	716	786	3543
NZ	46	59	71	80	78	89	423
Total	279	493	737	788	794	875	3966

5. Descriptive statistics

Table 2 panel A presents the descriptive statistics for the Australian sample. The mean and median logarithm total assets are approximately \$11.372 million and \$11.146 million respectively, whereas standard deviation is 1.919. The Australian sample firms tend to be loss making firms. The income before extraordinary items as a portion of total assets (E_{it}) is negative (−0.022). Mean total accruals (TA_{it}), calculated as the difference between incomes before extraordinary items and operating cash flows, are negative as well. In examining the control variables, we observe a negative profitability among Australian firms, indicating again that on average Australian firms are making loss in the sample period. A relatively large deviation is evident in growth opportunity with the standard deviation being 13.615 per cent. When comparing New Zealand firms to Australian firms, we find that New Zealand firms tend to be larger in size and perform better. Panel B shows that for New Zealand firms the mean and median logarithm total assets are approximately \$12.363 million and \$12.364 million

respectively and operating cash flows are positive. This reflects the sampling procedure where Australian firms are widely collected across large firms as well as very small firms. But the New Zealand sample mainly includes large firms. The distribution is skewed by some large companies as can be seen from the relatively larger mean and median values of sales, account receivables and property, plant and equipments. The control variable profitability again is consistent and positive. Finally, New Zealand firms tend to have a higher leverage, 29.1 per cent of total assets is financed by debt, which is higher than the average 21.4 per cent level of Australian firms. Such a higher level financing could be used in fixed assets investment, which we can observe that New Zealand firms also tend to be capital intensive with 79.6 per cent of total assets are gross property, plant and equipment.

Table 2: Descriptive Statistics

Panel A-AUS						
Variable	N	Mean	Median	S.D.	Min	Max
E_{it}	3543	-0.022	0.038	0.232	-0.997	0.985
TA_{it}	3543	-0.139	-0.045	1.109	-24.725	29.908
REV_{it}	3543	2.557	1.015	7.703	0.0001	142.465
AR_{it}	3543	0.403	0.166	1.031	0.0004	11.374
PPE_{it}	3543	1.052	0.368	3.878	0.0001	72.548
CF_{it}	3543	0.110	0.067	1.343	-46.880	21.807
$LOG A_{it-1}$	3543	11.372	11.146	1.919	7.448	15.906
$SIZE_{it}$	3543	11.222	11.105	2.057	5.605	17.062
$GROWTH_{it}$	3543	1.237	0.087	13.615	-512.229	142.465
$PROFIT_{it}$	3543	-0.068	0.034	0.412	-6.758	1.010
$LEVERAGE_{it}$	3543	0.214	0.196	0.170	0.000	0.872
$CAPITAL_{it}$	3543	0.392	0.344	0.265	0.001	1.747
Panel B-NZ						
Variable	N	Mean	Median	S.D.	Min	Max
E_{it}	423	0.057	0.067	0.111	-0.694	0.408
TA_{it}	423	-0.278	-0.048	1.624	-20.503	2.186
REV_{it}	423	3.101	0.928	9.735	0.002	135.12
AR_{it}	423	0.436	0.124	1.072	0.002	11.093
PPE_{it}	423	2.975	0.855	13.619	0.001	203.671
CF_{it}	423	0.298	0.111	1.505	-13.769	17.050
$LOG A_{it-1}$	423	12.363	12.364	1.634	8.135	15.909
$SIZE_{it}$	423	11.695	11.741	1.653	7.226	15.918
$GROWTH_{it}$	423	2.055	0.056	9.773	-3.402	133.714
$PROFIT_{it}$	423	0.043	0.059	0.155	-1.953	0.391
$LEVERAGE_{it}$	423	0.291	0.277	0.176	0.000	0.887

CAPITAL _{it}	423	0.796	0.711	0.701	0.019	5.664
<i>Variable definitions:</i>						
E _{it}	=	Net income before extraordinary items for firm <i>i</i> in year <i>t</i>				
TA _{it}	=	Total accruals for firm <i>i</i> at year <i>t</i> , defined as the difference between net income before extraordinary items and operating cash flows				
REV _{it}	=	Revenues for firm <i>i</i> at year <i>t</i>				
AR _{it}	=	Account receivables firm <i>i</i> at year <i>t</i>				
PPE _{it}	=	Gross property plant and equipment for firm <i>i</i> at year <i>t</i>				
CF _{it}	=	Cash flows from operating activities for firm <i>i</i> in year <i>t</i>				
LOG A _{it-1}	=	Log form of total assets for firm <i>i</i> at beginning of year				
SIZE _{it}	=	Firm size for firm <i>i</i> for year <i>t</i> , measured by the logarithm of the total assets at year <i>t</i>				
GROWTH _{it}	=	Growth opportunity for firm <i>i</i> for year <i>t</i> , measured by the change of sales between year <i>t</i> and <i>t-1</i> divided by total assets at year <i>t</i>				
PROFIT _{it}	=	Profitability, measured by net operating income divided by total equity for firm <i>i</i> at year <i>t</i>				
LEVERAGE _{it}	=	Leverage, measured by total debt (long term debt + short term debt) to total assets for firm <i>i</i> in year <i>t</i>				
CAPITAL _{it}	=	Capital intensity, measured as gross property, plant and equipment divided by total assets for firm <i>i</i> in year <i>t</i>				

6. Empirical Results

6.1 Test of earnings management by year

Large values of discretionary accruals are conventionally interpreted as evidence of earnings management. Large positive discretionary accruals imply that managers manipulate income upwards whereas large negative discretionary accruals suggest that managers engage in downward earnings management. In this section we test the null hypothesis of no earnings management where discretionary accruals are expected to be zero.

Table 3 Panel A shows discretionary accruals by year for Australian firms. The mean (median) values of discretionary accruals are negative for the years of 2001, 2002 and 2003, being -1.5% (-0.5%), -19.9% (-2.4%) and -8.9% (-2.6%). On the contrary, the mean values of discretionary accruals are positive for the years of 2004, 2005 and 2006, that is, 0.3%, 5.9% and 0.8%. The results from parametric t-test show that the mean values of discretionary accruals are significantly negative for the year of 2002 and significantly positive for the year of 2005. The results from Wilcoxon test show that the median values of discretionary accruals are significantly negative for the years of 2002 and 2003 and significantly positive for the year of

2005. Panel B shows discretionary accruals by year for New Zealand firms. The mean values of discretionary accruals are again negative for the years of 2001, 2002 and 2003, being -8.3% , -2.2% and -1.9% . On the contrary, the mean (median) values of discretionary accruals are positive for the years of 2004, 2005 and 2006. The results from parametric t-test show that the mean values of discretionary accruals are insignificantly negative for the year of 2002 and 2003 while significantly positive for the years of 2004 and 2005. The results from Wilcoxon test show that the median values of discretionary accruals are significantly positive for the years of 2004 and 2005 as well.

Table 3: Test of Earnings Management by Year

Panel A-AUS

Year	Parametric t-test			Wilcoxon Signed Rank Test		
	Mean	t-stat	p	Median	z-stat	p
2001	-0.015	-0.177	0.859	-0.005	-5	0.447
2002	-0.199	-2.141	0.033	-0.024	-33	<.0001
2003	-0.089	-2.131	0.843	-0.026	-40	<.0001
2004	0.003	0.187	0.329	0.001	1.5	0.922
2005	0.059	2.418	0.016	0.011	19.5	0.066
2006	0.008	0.177	0.859	0.004	9.5	0.407

Panel B-NZ

Year	Parametric t-test			Wilcoxon Signed Rank Test		
	Mean	t-stat	p	Median	z-stat	p
2001	-0.083	-0.545	0.589	0.055	3.5	0.296
2002	-0.022	-0.449	0.655	0.012	5.5	0.126
2003	-0.019	-0.386	0.700	0.023	4.5	0.281
2004	0.072	3.633	0.001	0.387	11.5	0.004
2005	0.076	3.327	0.001	0.056	13.5	0.004
2006	0.006	0.215	0.831	0.024	6	0.162

Note: Earnings management is measured as discretionary accruals which are obtained as the residual from modified Jones model (Equation 1). Under the null hypothesis that no earnings management takes place in a particular year, one should expect to see the discretionary component of accruals to be zero. This proposition is tested by examining the mean (t-test) and median (Wilcoxon signed rank test) of discretionary accruals being zero. Reported p-values are from two-tailed tests.

Taken together, we find that Australian firms and New Zealand firms are more likely to engage in a downward earnings management in the years of 2001, 2002 and 2003. In the contrast, both countries firms are more likely to engage in an upward earnings management in the years of 2004, 2005 and 2006. Nonetheless, this preliminary analysis does not indicate that the introduction of new corporate governance regulations was associated with a decline in earnings management.

6.2 Test of Earnings Management before and after the Corporate Governance Reform

Previous section examines the trend of discretionary accruals over the sample period and the result does not indicate a decline in earnings management. In fact, a positive time trend is observed in the Australian sample as well as the New Zealand sample, suggesting that earnings management has been growing over time. In this section, we further group firms into two sub-samples Pre-Reform period versus Post-Reform period and we are interested to see whether earnings management behaviour has changed before and after the corporate governance reform. The Pre-Reform period covers year 2001, 2002 and 2003 and the Post-Reform period covers year 2004, 2005 and 2006.

Table 4 Panel A reveals that for the Australian sample, significantly negative discretionary accruals occurred in the Pre-Reform period following significantly positive discretionary accruals in the Post-Reform period. The mean (median) discretionary accruals are -11.2% (-2.2%) of total assets for the Pre-Reform period sub-sample significant at less than 1 per cent level for the Pre-Reform period sub-sample. In the contrast, the mean (median) discretionary accruals are 2.3% (0.2%) of total assets for the Post-Reform period. We use two sample *t*-test for mean difference between the Pre-Reform period and Post-Reform period and the difference is significant at less than 1 per cent level. Table 4 Panel B shows that for the New

Zealand sample, both Pre-Reform period and Post-Reform period display average positive discretionary accruals. However, the magnitude of positive discretionary accruals is higher for the Post-Reform period and two sample *t*-test for mean difference is insignificant. Although a similar pattern has been observed among the New Zealand sample the test statistics are quantitatively insignificant.

One possible explanation is that the nature of corporate governance reform occurred in the Australian market is mandatory after the passage of CLERP 9 a considerable part of the Corporation Act became focus on mandatory corporate governance rules to encourage suitable decision making and incentive oriented corporate environment through deterring manipulative earnings management and fraudulent financial reporting. As result of legal enforcement, Australian firms are expected to display a strong change in earnings management behaviour before and after the reform program was introduced. New Zealand Stock Exchange also imposed changes in its listing rules and introduced the Corporate Governance Code of Best Practice to improve the governance and audit quality. However, the Corporate Governance Code of Best Practice is not mandatory for New Zealand companies who can have the discretion not to follow the recommendations by simply providing explanation for why the relevant corporate governance recommendations have not been followed. This probably explains why there is no significant difference in earnings management behaviour before and after the voluntary adoption of the Corporate Governance Code of Best Practice. One would expect to observe a decline in earnings management given the public scrutiny in the aftermath of reform but interestingly the magnitude of earnings management behaviour is higher for both Australian and New Zealand firms. Despite the Australian sample shows a significant result, the time pattern in discretionary accruals illustrates clearly that the corporate governance reform was not accompanied by a

decline in earnings management. Managers can engage in both directions’ earnings management depending on firm-specific circumstances. We predict before the introduction of corporate law and economic reform program, companies with high reported earnings may be targeted by the regulators and attracted more public inquiry during the reform movement and therefore managers would have incentive to engage in downward earnings management to reduce such political exposure. We also predict that following the reform action, managers are more likely to show a smooth and growing earnings string to prove that firm performance has benefited from the reform, so managers tend to engage in upward earning management to signal a better shaped and improved financial performance after the regulatory change.

Table 4: Test of Earnings Management before and after Corporate Reform

Panel A-AUS							
	Parametric t-test			Wilcoxon Signed Rank Test			Two sample t-test for mean difference
	Mean	t-stat	p	Median	z-stat	p	
Pre-Reform period	-0.112	-2.823	0.005	-0.022	-78.5	<.0001	-3.51
Post-Reform period	0.023	1.285	0.198	0.002	8.5	0.660	(0.000)***

Panel B-NZ							
	Parametric t-test			Wilcoxon Signed Rank Test			Two sample t-test for mean difference
	Mean	t-stat	p	Median	z-stat	p	
Pre-Reform period	0.031	0.353	0.724	0.020	13.5	0.022	-0.24
Post-Reform period	0.050	3.533	0.000	0.040	31	<.0001	(0.807)

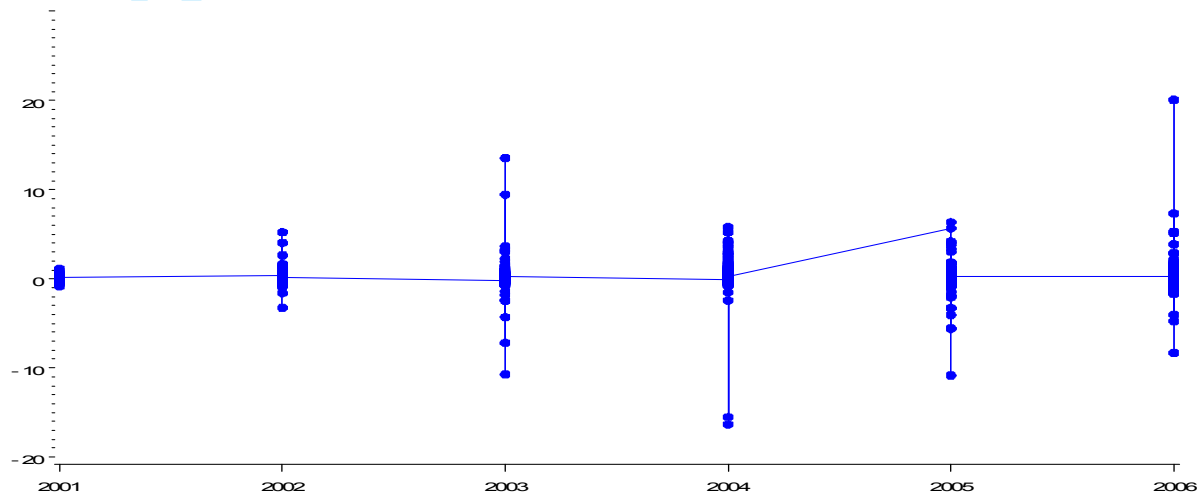
6.3 Test of structural change before and after corporate governance reform

We plot the discretionary accruals over time and observe if there are any obvious structural changes in the series. Figure 1 Panel A shows a large increase in its value around year 2004 and 2005 for the Australian sample. The observation suggests there could be some change in earnings management behaviour when the new laws were introduced. We also suspect that the

structural change may occur in the year of 2005 as the time trend when discretionary accruals has increased from the year of 2004 to 2005. Nevertheless, Panel B shows when we plot the discretionary accruals for the New Zealand sample, we do not observe a similar upward trend.

Figure1. Plot of Discretionary Accrual for the Period 2001 to 2006

Panel A- AUS



Panel B- NZ

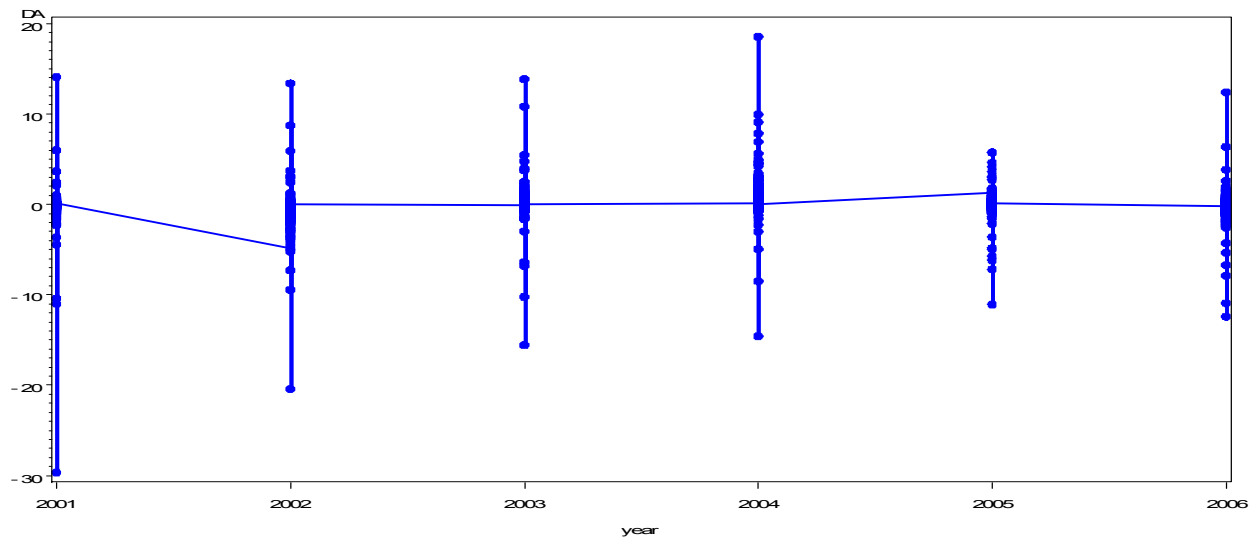


Table 5 Panel A reports the results of the Chow test for the Australian sample. The time variable indicates that the slope of the discretionary accruals onto time line has increased over the entire sample period and it is significant at a 5 per cent level. There is also a sign that earnings management is negatively associated with the Pre-Reform period and positively associated with the Post-Reform period, nonetheless, the p-value(s) are not statistically significant. The Chow test using a breakpoint year of 2004 rejects the null hypothesis that $\beta^1 = \beta^2$ and $\phi^1 = \phi^2$. We repeat the Chow test by using the year of 2005 as the breakpoint and the result is consistent with that of 2004. The Chow tests performed on the discretionary accruals indicates a structural change has occurred in earnings management practice before and after the new regulations. Panel B reports the Chow test for the New Zealand firms. The time variable also reveals that the coefficient of the discretionary accruals onto time line has increased over the period with a negative coefficient (-0.109) for the Pre-Reform period and a positive coefficient (0.007) for the Post-Reform period. Nevertheless, the time variable is not statistically significant across the Pre-Reform and Post-Reform two sub periods as well as the entire sample period. The Chow test using a breakpoint year of 2004 and 2005 failed to reject the null hypothesis that $\beta^1 = \beta^2$ and $\phi^1 = \phi^2$ and therefore we can conclude that there is a structural change occurred in modeling earning management before and after the new regulations.

Table 5: Chow Test of Structural Change before and after Corporate Reform

Panel A-AUS			
	Pre-Reform period	Post-Reform period	Entire-period
Intercept	142.972 (1.47)	-2.456 (-0.06)	-12.779 (-0.58)
TIME	-0.071 (-1.47)	0.001 (0.07)	0.024 (0.03)**
SIZE	-0.011 (-0.63)	-0.012 (-1.56)	-0.012 (-1.50)
GROWTH	-0.023	-0.022	-0.021

		(-5.86)***	(-5.86)***	(-8.59)***
PROFIT	0.496	0.210	0.366	
	(6.57)***	(4.50)***	(8.67)	
LEVERAGE	0.368	0.077	0.188	
	(1.72)*	(0.83)	(1.91)*	
CAPITAL	-0.132	-0.074	-0.095	
	(-0.97)	(-1.24)	(-1.50)	
Adjust R Square	0.010	0.780	0.53	
Durbin-Watson	2.018	1.61	1.83	
Chow test				
(break point)	2004	2005		
F-stat	2.28	2.58		
p-value	0.026	0.011		

Panel B-NZ

	Pre-Reform period	Post-Reform period	Entire-period
Intercept	217.094	55.472	14.857
	(0.99)	(1.78)	(0.32)
TIME	-0.109	0.007	-0.007
	(-1.00)	(1.78)	(-0.33)
SIZE	0.099	-0.016	0.028
	(1.63)	(-1.93)*	(1.18)
GROWTH	0.000	-0.017	-0.000
	(0.03)	(-4.57)***	(-0.22)
PROFIT	0.184	0.421	0.236
	(0.41)	(3.70)***	(0.96)
LEVERAGE	-0.099	0.119	0.056
	(-0.19)	(1.53)	(0.25)
CAPITAL	0.001	0.002	0.012
	(0.01)	(0.13)	(0.24)
Adjust R Square	0.021	0.713	0.656
Durbin-Watson	1.94	1.96	1.95
Chow test	2004	2005	
(break point)			
F-stat	1.33	1.36	
p-value	0.22	0.22	

The dependent variable is earnings management proxy (*DA*) measured as discretionary accruals which are obtained as the residual from modified Jones model (Equation 1).

Variable definitions:

TIME	=	The time index, measured as the calendar year minus 2000
SIZE _{it}	=	Firm size for firm <i>i</i> for year <i>t</i> , measured by the logarithm of the total assets at year <i>t</i>
GROWTH _{it}	=	Growth opportunity for firm <i>i</i> for year <i>t</i> , measured by the change of sales between year <i>t</i> and <i>t-1</i> divided by total assets at year <i>t</i>
PROFIT _{it}	=	Profitability, measured by net operating income divided by total equity for firm <i>i</i> at year <i>t</i>
LEVERAG _{it}	=	Leverage, measured by total debt (long term debt + short term debt) to total assets for firm <i>i</i> in year <i>t</i>
CAPITAL _{it}	=	Capital intensity, measured as gross property, plant and equipment divided by total assets for firm <i>i</i> in year <i>t</i>

6.4 Test of structural change using dummy variable approach

The previous section we have used the Chow test to capture the difference in the intercept between the Pre- and Post-Reform periods, in the following we will apply a dummy variable approach to replace the Chow test and test the association between discretionary accruals and the reform period controlling for other independent variables. Gujarati (2009) suggests that the dummy variable approach not only is useful in testing for differences in the models, but also enables researchers to clarify whether the differences are attributed to the intercept, the slopes, or both. We hope such approach could improve the quality of estimates in testing the effect of CLERP 9 on earnings management behaviour. As far as a dummy approach is concerned, the unrestricted regression would contain dummy variables for the intercept and for the slope coefficients and the equation (2) can be rewritten as:

$$\begin{aligned} DA_{it} = & \delta_0 + \delta_1 REFORM + \delta_2 TIME + \delta_3 TIME \times REFORM + \delta_4 SIZE_{it} \\ & + \delta_5 GROWTH_{it} + \delta_6 PROFIT_{it} + \delta_7 LEVERAGE_{it} + \delta_8 CAPITAL_{it} \\ & + \delta_9 SIZE_{it} \times REFORM + \delta_{10} GROWTH_{it} \times REFORM + \delta_{11} PROFIT_{it} \times REFORM \\ & + \delta_{12} LEVERAGE_{it} \times REFORM + \delta_{13} CAPITAL_{it} \times REFORM + \mu_{it} \end{aligned} \quad (3)$$

Where *REFORM* is a dummy variable equal to 1 for the years 2004, 2005 and 2006 (represents the Post-Reform Period) and 0 for the years 2001, 2002 and 2003 (indicates the Pre-Reform period), this is the main variable of interest used to capture the effect of the change in the regulatory change, namely the introduction of CLERP 9. *TIME* is a index variable, measured as the calendar year minus 2000. The changes in earnings management levels in the Post-Reform period might have been caused by changes either in the regulatory reform, the control variables, or both, so we address this by introducing the interaction variables to detect any possible structural changes that might have taken place between the Pre-Reform and Post-Reform periods due to changes in the regulatory reform program, the control variables, or the interaction between

both the regulatory reform and the control variables. We consider several interactions with the *REFORM* dummy, the time index ($TIME \times REFORM$); firm size ($SIZE \times REFORM$); growth opportunity ($GROWTH \times REFORM$); profitability ($PROFIT \times REFORM$); leverage level ($LEVERAGE \times REFORM$); capital intensity ($CAPITAL \times REFORM$). In the Chow test, we are required to run three different models, one for Pre-Reform period, one for Post-Reform period and another for the pooled data. Under the dummy variable approach, we are able to estimate equation (3) with a single pooled data set and therefore we expect the model's degrees of freedom will increase as well as the power of hypothesis testing.

Table 6 Panel A reports the results of using dummy variable approach in testing earnings management before and after the corporate reform in Australia. We find a positive trend in the level of earnings management, showing income-increasing earnings management in the Post-Reform Period. The dummy variable *REFORM* is positive and significant for Australian firms with a coefficient of 0.597 significant at 5 per cent level. This suggests that after controlling for the other independent variables and the interaction variables, the period after CLERP 9 is associated with income-increasing earnings management. This is an interesting result yet one would expect to observe a decrease in earnings management activities after the passage of new law. We are cautious in attributing the increase in the earnings management solely to the passage of CLERP 9 from the dummy variable approach. Firm characteristics could have contributed to an increase in earnings management and we find that earnings management is not significantly correlated with firm size alone, however, when observing the interaction between firm size and reform dummy, the level of earnings management is significantly negatively associated with firm size in the Post-Reform period, suggesting the increase in earnings management level in the Post-Reform period might have been caused by small firms. One possible explanation is that

firm size plays an important role in determining accounting numbers: small sized firms are less likely to attract higher political exposure and scrutiny from auditors, investors, and the regulators and therefore the passage of CLERP 9 did not constrain small firms from engaging in earnings management. This result also implies that although the regulatory reform has increased vigilance of investors, analysts and regulators and greater care taken by large firms in financial reporting, to what extent the new regulation has improved the financial reporting quality within small firms is yet an open question. Panel B reports the results of using dummy variable approach in testing earnings management before and after the passage of the Corporate Governance Code of Best Practice in New Zealand. The dummy variable *REFORM* is negative but insignificant for New Zealand firms. Although the level of earnings management is positively associated with firm size in the Post-Reform period, the relationship is insignificant for the New Zealand sample. We find that earnings management is positively correlated with growth rate and negatively correlated with profitability, both significant at less than 1 per cent level, indicating when everything has been equal firms with higher growth opportunity and poorer profit are more likely to engage in earnings management. Interestingly, when the interaction between growth rate and reform dummy is concerned, the level of earnings management is significantly negatively associated with growth opportunity in the Post-Reform period, suggesting earnings management activities in the Post-Reform period might have been caused by more mature and low growing firms.

Discretionary accruals can be used to both increase or decrease earnings, positive discretionary accruals suggest upward earnings management while negative discretionary accruals suggest downward earnings management. Both directions' earnings management have been documented by prior studies. Healy (1985) find in good years managers tend to hide some income for future rainy day and the strategy of 'taking a bath' is essentially downward earnings

management that managers reduce current earnings by deferring revenues and accelerating write-offs. One of the studies that have been widely cited to explain downward earning management is Watts and Zimmerman (1978) who suggested that large size firms are more political sensitive and easier to attract political exposure, so managers of large firms are more likely to engage in income-decreasing earnings management to reduce political exposure. Manzon (1992) also find that large firms use discretionary accruals to reduce earnings in order to minimize income tax. Han and Wang (1998) find oil firms with an attempt to profit from the 1990 Gulf War used accruals to reduce their reported quarterly earnings, thus, relax the political restriction on sudden gasoline price increase. Cahan (1992) find managers would have incentive to reduce income during antitrust investigation since regulators believe a high accounting income indicating excessive market power. Jones (1991) studied the actions of firms to lower reported earnings during import relief investigations and concluded that to qualify for relief there was a tendency for organization to reduce their reported earnings through downward earnings management. In the Australian context, Monem (2003) find a downward earnings management by Australian gold-mining firms to reduce income tax after the introduction of the Australian Gold Tax in 1991. Lim and Matolcsy (1999) investigated product price controls established by the Australian government in the early 1970s and find Australian firms reduced reported net income by adjusting discretionary accruals to increase the likelihood of approval of the requested price increase. Wells (2002) and Godfrey *et al.* (2003) find evidence of downward earnings management in the year of CEO change and upward earnings management in the year after CEO change, the comparison of low earnings and high earnings before and after the change of CEO was suggested to be the strategy used by the new CEO to convince the public that he/she has done a better job than the previous manager.

Managerial incentives also affect earnings management. Self-interested manipulation, for instance, managing earnings to increase compensation may cause upward earnings management. Agency theory predicts that there is potential conflict of interest between managers and owners/shareholders, owners/shareholders design management compensation contracts in order to constrain managers to act in their best interest (Jensen and Meckling, 1976). Theoretically, management compensation contracts are viewed as devices to reduce the conflict of interest between managers and shareholders and maximize a firm's value. However, these compensation contracts may induce upward earnings management simply because managers' compensation is either tied to accounting earnings (for example, bonus) or stock prices (for example, options). There is a possibility that rewarding managers on the basis of reported earnings or stock performance may induce them to manipulate such figures upward to improve their apparent performance and, ultimately, their related compensations.

The signalling perspective of earnings management suggests that managers use upward earnings management as a mechanism to communicate with investors. Hughes (1986) argued that accounting information such as net income can be useful in helping to signal firm value to investors. Ronen and Sadan (1980) asserted that smoothing income can enhance the ability of financial information users to predict future income. Wang and Williams (1994) argued that income smoothing in fact enhances the informational value of reported earnings. Subramanyam (1996) find that discretionary accruals are positively priced by the market and suggested that managers use discretion to provide useful information to both existing stakeholders and prospective investors. Chaney *et al.* (1995), Hunt *et al.* (1997), Burgstahler and Dichev (1997) also provided evidence that managers reduce the information asymmetry between themselves and related stakeholders through the use of accounting discretion.

Managers engage in both directions' earnings management depending on firm-specific circumstances. The current findings lead us to believe there is a reaction from managers to reduce earnings before the introduction of corporate law and economic reform program, companies with high reported earnings may be targeted by the regulators and attracted more public inquiry during the reform movement and therefore managers would have incentive to engage in downward earnings management to reduce such political exposure. Subsequently following the reform action, managers are more likely to show a smooth and growing earnings string to prove that firm performance has benefited from the reform, specifically, with a strong investor protection and high level of transparency in financial reporting and disclosure and high level of independence given to audit, investors should have more confidence in investing in firms than ever. As such, upward earning management severs a role of information signalling in the period after the introduction of corporate law and economic reform program to convince investors the better shaping and improved financial performance after the regulatory change.

**Table 6: Dummy Variable Approach Test of Structural Change
before and after Corporate Reform**

Panel A-AUS				
	Coefficient	Standard Error	t-statistics	$p > t $
Intercept	-31.827	63.292	-0.50	0.615
TIME	0.015	0.031	0.50	0.613
REFORM	0.597	0.294	2.03	0.042
TIME × REFORM	-0.024	0.037	-0.65	0.518
SIZE	-0.006	0.012	-0.53	0.598
GROWTH	0.098	0.021	4.60	<.0001
PROFIT	-0.282	0.081	-3.48	0.001
LEVERAGE	-0.099	0.120	-0.82	0.411
CAPITAL	0.451	0.307	1.47	0.141
SIZE × REFORM	-0.025	0.013	-1.84	0.066
GROWTH × REFORM	-0.063	0.030	-2.11	0.035
PROFIT × REFORM	0.164	0.089	1.83	0.067
LEVERAGE × REFORM	0.056	0.135	0.42	0.678
CAPITAL × REFORM	-0.474	0.310	-1.53	0.126
Industry Dummy				YES
R Square				0.1696
Durbin-Watson				1.99

Panel A-NZ

	Coefficient	Standard Error	t-statistics	$p > t $
Intercept	93.723	54.257	1.73	0.085
TIME	-0.006	0.027	-0.73	0.182
REFORM	-0.384	0.259	-1.48	0.138
TIME \times REFORM	0.076	0.034	0.19	0.290
SIZE	-0.008	0.013	-0.67	0.501
GROWTH	0.042	0.010	4.14	<.0001
PROFIT	-0.305	0.026	-11.54	<.0001
LEVERAGE	0.034	0.112	0.31	0.760
CAPITAL	0.007	0.016	0.44	0.663
SIZE \times REFORM	0.014	0.016	0.85	0.395
GROWTH \times REFORM	-0.021	0.012	-1.74	0.083
PROFIT \times REFORM	-0.012	0.125	-0.10	0.919
LEVERAGE \times REFORM	-0.049	0.149	-0.33	0.741
CAPITAL \times REFORM	-0.025	0.022	-1.15	0.250
Industry Dummy				YES
R Square				0.4610
Durbin-Watson				2.39

The dependent variable is earnings management proxy (*DA*) measured as discretionary accruals which are obtained as the residual from modified Jones model (Equation 1).

Variable definitions:

TIME	=	The time index, measured as the calendar year minus 2000
SIZE _{it}	=	Firm size for firm <i>i</i> for year <i>t</i> , measured by the logarithm of the total assets at year <i>t</i>
GROWTH _{it}	=	Growth opportunity for firm <i>i</i> for year <i>t</i> , measured by the change of sales between year <i>t</i> and <i>t-1</i> divided by total assets at year <i>t</i>
PROFIT _{it}	=	Profitability, measured by net operating income divided by total equity for firm <i>i</i> at year <i>t</i>
LEVERAGE _{it}	=	Leverage, measured by total debt (long term debt + short term debt) to total assets for firm <i>i</i> in year <i>t</i>
CAPITAL _{it}	=	Capital intensity, measured as gross property, plant and equipment divided by total assets for firm <i>i</i> in year <i>t</i>

6.5 Test of structural change using predictive failure method

We also perform the predictive failure test as an alternative approach to test the stability of the model. The predictive failure test requires estimating the association between earnings management and time period for a ‘long’ sub-sample and then using those coefficient estimates for predicting values of earnings management for the other period. These predictions for earnings management are then implicitly compared with the actual values. The null hypothesis for this test is that the prediction errors for all of the forecasted observations are zero. We estimate the discretionary accruals and time regression for the period 2001-2005, obtaining estimated intercept and slope coefficients based on the data for 2001-2005. Then we use the actual time

2006 and the intercept and slope values for the period 2001-2005, we predict the values of discretionary accruals for the year 2006.

If there is no serious structural break in the parameter values, the values of discretionary accruals estimated for 2006, based on the parameter estimates for the earlier period, should not be very different from the actual values of discretionary accruals prevailing the latter period. If, however, there is a significant difference between the actual and predicated values of discretionary accruals for the latter period, it will suggest a possible structural change occurred in earnings management during the sample period. We use *F-test* for the difference between the actual and estimated discretionary accruals:

$$F = \frac{SSE - SSE_1}{SSE_1} \times \frac{T_1 - k}{T_2}$$

Where T_1 = number of observation in the entire period; T_2 = number of observation that the model is attempting to predict; k is the number of parameters estimated (two in our case). We run the regression for the whole entire period (2001 to 2006) and obtain the SSE. This is the restricted regression. Then we run the regression for the sub-period (2001 to 2003) and obtain the SSE_1 .

2001-2006 (entire sample)

$$\hat{DA}_t = 391.2979 - 0.1948 \times TIME_t$$

2001-2003 (sub-sample)

$$\hat{DA}_t = 3108 - 1.5524 \times TIME_t$$

We then compute the F-statistic is 0.31. So the null hypothesis that the model can adequately predict the Post-Reform period observations would not be rejected. Both the Chow test and alternative dummy variable approach and the predictive failure test lead us to conclude that the

model did not contain structural break problem during the 2001-2006 periods. Therefore, we suggest that Australia passed the legislation the *Corporate Law Economic Reform Program Act of 2004* (CLERP 9) to improve corporate governance, audit quality, and auditor independence in 2004 did not reduce firms' earnings management practice. Likewise, New Zealand Stock Exchange (NZX) imposed changes in its listing rules and introduced the Corporate Governance Code of Best Practice to improve the governance and audit quality in the same year 2004 did not reduce firms' earnings management practice either. These findings are similar to a study under review documenting no virtual improvement in earning management behaviour in the UK firms as compared to the Italian firms after the recent corporate governance and IFRS reforms. Our assertion in this regard is that although we recognize impressive improvement in timely, useful and reliable information in the company annual reports, the regulatory reforms could bring little change in earning management behaviour.

Interestingly, we also find that firms tend to engage in downward earnings management before the corporate reforms and then following upward earnings management after the corporate reforms. This is consistent with the 'political cost' theory where firms use downward earnings management as a plausible and sustainable earnings management strategy to minimize the likelihood of adverse political attention (Watts and Zimmerman, 1978; Jones, 1991). The current findings suggest there is a reaction from managers to reduce earnings before the introduction of corporate law and economic reform program, companies with high reported earnings may be targeted by the regulators and attracted more public inquiry during the reform movement and therefore managers would have incentive to engage in downward earnings management to reduce such political exposure. Subsequently following the reform action, managers are more likely to show a smooth and growing earnings string to prove that firm

performance has benefited from the reform, specifically, with a strong investor protection and high level of transparency in financial reporting and disclosure and high level of independence given to audit, investors should have more confidence in investing in firms than ever. As such, upward earning management severs a role of information signaling in the period after the introduction of corporate law and economic reform program to convince investors the better shaping and improved financial performance after the regulatory change.

7. Sensitivity analysis

We employ several sensitivity tests to assess the robustness of the previously results. In the main test, we use Modified Jones model to estimate discretionary accruals. Dechow *et al.* (1995) assume that all changes in credit sales result from earnings management and thus adjust the original Jones model by removing credit sales from revenues. In the literature, their model is referred as Modified Jones model. A widely used measure of earnings management through the discretionary accrual is the Jones model. Jones (1991) proposes the total accrual as a function of changes in revenue and levels of property plant and equipment. Therefore, we re-estimate discretionary accruals by using Jones model, specifically, the Jones model in a regression equation form is:

$$TA_{it} / A_{it-1} = \alpha_1 (1 / A_{it-1}) + \alpha_2 (\Delta REV_{it} / A_{it-1}) + \alpha_3 (PPE_{it} / A_{it-1}) + \varepsilon_{it}$$

Where i and t are indices for firms and time periods. TA_{it} is total accruals being the difference between net operating income and operating cash flows. ΔREV_{it} is the change in net sales from period $t-1$ to t . PPE_{it} is net property, plant and equipment. Factors such as growth and inflations rate can cause the time series of economic variables to exhibit unequal variances over time. Therefore, all variables are scaled by lagged total assets, A_{it-1} , to reduce heteroscedasticity.

We repeat all the earlier tests of earnings management using discretionary accruals estimated from Jones model. In general, we obtain qualitatively similar results. Our estimations of the parameters using both Jones model and Modified Jones model do not include a constant term in regressions. As Kothari et al. (2005) assert that constant term can control additional heteroscedasticity, we re-estimate our models with a constant included and estimate the coefficients again and the results remain to be consistent.

In the main analysis we estimate the model of earnings management using an unbalanced panel sample. When there is no firm- or time-specific effects Ordinary Least Squares is appropriate. Despite we have controlled for firm characteristics and used time dummy variables, it might be expected that both unobservable firm-specific and unobservable time-specific factors will have an effect on earnings management behaviour. Some of these factors vary across firms while other vary across time. For instance, the culture of one firm may be consistently more profit driven than that of other firms and as a result, the firm may engage in consistently more earnings management in order to drive up earnings performance. In a similar vein, apart from the regulatory change from time to time, other macro-economic factors may also affect managers' opportunistic behaviour. For example, interest rate may vary across time, the cost of debt becomes higher as the interest rate goes up and as a result the earnings after deducting interest expenses becomes lower. Nonetheless, highly levered firms may be desperate to report a lucrative business performance in the year prior to debt covenant violation and thus earnings management is expected to be higher in those periods with high interest payment burdens. To address any unobservable firm-specific and time-specific factors that may have an impact on modeling earnings management behaviour, we could use both the fixed effects model and the random effects model. Considering that the random effects model is more applicable to a much

larger population, we decide to use the fixed effects model and re-run the main tests. In Table 7 Panel A, the coefficients, standard errors, t-statistics and p-values for the independent variables are shown for the Australian firms using the fixed effects model. The time variable and the dummy variable *REFORM* are both positive and significant at 10 per cent, indicating an upward earnings management in the Post-Reform Period. We also find that earnings management is significantly negatively associated with firm size in the fixed effects model, however, the interaction between firm size and reform dummy is insignificant which is inconsistent with the pooled regression. This finding again suggests that firm size plays an important role in determining earnings management and the passage of CLERP 9 did not constrain small firms from practicing earnings management. Consistently, growth rate is positively associated with discretionary accruals and profitability is negatively correlated with discretionary accruals, significant at less than 1 per cent and 5 per cent respectively. Panel B reports the results for New Zealand firms using the fixed effects model. Consistent with previously analysis, the time and the *REFORM* dummy are negative but insignificant. The firm size variable alone is negatively associated with discretionary accruals and significant at 10 per cent; while in the Post-Reform period, the negative relationship is not significant. We also find that discretionary accruals is positively associated with growth rate and negatively associated with profitability.

Table 7: Modeling Structural Change before and after Corporate Reform with Fixed Effects

Panel A-AUS					
	Coefficient	Standard Error	t-statistics	$p > t $	
Intercept	207.49	108.02	1.92	0.091	
TIME	0.103	0.053	1.92	0.055	
REFORM	0.685	0.389	1.76	0.078	
TIME \times REFORM	0.004	0.068	0.07	0.942	
SIZE	-0.038	0.021	-1.76	0.078	
GROWTH	0.002	0.000	6.17	<.0001	
PROFIT	-0.092	0.045	-2.03	0.042	

LEVERAGE	-0.072	0.146	-0.49	0.621
CAPITAL	0.238	0.136	1.74	0.081
SIZE × REFORM	-0.019	0.028	-0.70	0.483
GROWTH × REFORM	0.005	0.000	14.64	<.0001
PROFIT × REFORM	-0.074	0.060	-1.23	0.220
LEVERAGE × REFORM	0.007	0.189	0.04	0.968
CAPITAL × REFORM	-0.555	0.169	-3.28	0.001

Panel A-NZ

	Coefficient	Standard Error	t-statistics	$p > t $
Intercept	108.12	109.55	0.99	0.344
TIME	-0.053	0.054	-0.98	0.326
REFORM	-0.006	0.482	-0.01	0.989
TIME × REFORM	0.067	0.073	0.92	0.358
SIZE	-0.029	0.025	-1.16	0.246
GROWTH	0.021	0.006	3.10	0.002
PROFIT	-0.006	0.049	-0.14	0.891
LEVERAGE	0.074	0.225	0.33	0.741
CAPITAL	-0.003	0.062	-0.05	0.959
SIZE × REFORM	-0.008	0.035	-0.25	0.803
GROWTH × REFORM	0.005	0.007	0.79	0.427
PROFIT × REFORM	-0.523	0.255	-2.04	0.041
LEVERAGE × REFORM	-0.092	0.311	-0.30	0.767
CAPITAL × REFORM	-0.031	0.092	-0.35	0.728

The dependent variable is earnings management proxy (*DA*) measured as discretionary accruals which are obtained as the residual from modified Jones model (Equation 1). All the variables are previously defined.

8. Conclusion

This study examines how successful the regulatory reforms have been in relation to a specific outcome of management discretion, as we argue that the ability and enforcement of corporate governance to constrain earnings management, an indirect proxy for agency cost, as evidence of the effectiveness of the regulatory reforms. It aims is to investigate earnings management behaviour of Australian and New Zealand listed companies before and after the corporate governance and disclosure reforms. Following extant literature, we consider a positive change in earning management magnitude in post-reform periods than pre-reform periods as an outcome of comparative effectiveness of corporate governance practices in both countries. The expectation is that earnings manipulation declines as corporate governance environment improves in a particular country.

Using a sample of 3,966 firm-year observations including all ASX and NZX listed firms from the period 2001 to 2006, we find that behaviour of earnings management has not declined after the introduction of new regulations namely the *Corporate Law Economic Reform Program Act of 2004* (CLEPR 9) in Australia and the New Zealand Stock Exchange (NZX) governance rules in 2004. Both regulations were passed in a similar time frame in order to improve corporate governance, audit quality, and auditor independence. However, we observe a positive time trend in the entire sample as well as Australian and New Zealand sub-samples suggesting that earnings management has been growing over time. We further group firms into two sub-samples Pre-Reform period versus Post-Reform period and the results from Chow test do not indicate a structural change has occurred in earnings management practice before and after the new regulations. We also perform an alternative dummy variable approach and the predictive failure test and the results are robust. Specifically, we find that firms tend to engage in downward earnings management before the corporate reforms and following upwards earnings management after the corporate reforms. We argue a reaction from managers to reduce earnings before the introduction of corporate law and economic reform program, companies with high reported earnings may be targeted by the regulators and attracted more public inquiry during the reform movement and therefore managers would have incentive to engage in downward earnings management to reduce such political exposure. Subsequently following the reform action, managers are more likely to show a smooth and growing earnings string to prove that firm performance has benefited from the reform, specifically, with a strong investor protection and high level of transparency in financial reporting and disclosure and high level of independence given to audit, investors should have more confidence in investing in firms than ever. As such, upward earning management severs a role of information signaling in the period after the

introduction of corporate law and economic reform program to convince investors the better shaping and improved financial performance after the regulatory change. We also assume such shifting of earnings management behaviour from income decreasing to income increasing can be interpreted as the outcome of more ‘informative’, rather than ‘deliberate’, earnings management in a more transparent disclosure regime to capture short-run benefits of regulatory reforms, which is worth to further investigation. These findings can lead concerned parties in the corporate sector including regulatory authorities taking appropriate measures to promote earnings quality in the corporate reporting environment from a long-run decision usefulness context. Any future reforms on disclosure and corporate governance should be directed to protecting the interest of stakeholders as well as ensuring benefits outweighing costs for them. Only then, it would align to the expectation of the agency theory in alleviating agency costs and restoring the confidence of investors in companies’ financial reporting practice. The behavioral change in earnings management (i.e. informative earnings management) could be useful for companies in reducing agency costs as anticipated in agency theory.

There are several limitations of this study. Researchers tend to follow or replicate existing statistical methods just because they are commonly accepted. The model misspecification problem may stem from incorrectly decomposing total accruals between discretionary accruals and non-discretionary accruals components. This leads to biased results contenting two possible situations: documents earnings management evidence when none actually takes place (type I errors); or there is earnings management but discretionary accruals are not statistically significant to support the evidence (type II error). Since the economic determinants of non-discretionary accruals are not always or completely considered in the empirical research design, researchers’ findings widely suffer from omitted correlated variables problem. The findings in this current

study may be biased if the estimation model has omitted correlated variables. In all, the research method in detecting earnings management becomes crucial for this field study and a greater effort to develop new methodologies and more refined econometric techniques could advance the research on earnings management.

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