CEO COMPENSATION AND EARNINGS MANAGEMENT: THE EFFECTS OF CORPORATE GOVERNANCE AND THE GLOBAL FINANCIAL CRISIS

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Abstract

The growth of Chief Executive Officer (CEO) compensation in recent years, even in the face of the recent Global Financial Crisis (GFC), has been the subject of much attention. Agency and Positive Accounting theories suggest business management is inclined to engage in earnings management in order to increase their compensation. It is observed that managers find it more difficult to meet earnings targets during a financial crisis and, therefore, may engage in earnings management to present satisfactory performance to boost compensation. However, a strong corporate governance structure may moderate the effect of earnings management on CEO compensation.

This study tests the sensitivity of the relationship between CEO compensation and earnings management to the strength of corporate governance structures in the periods preceding, during and following the GFC. It examines the following questions: (1) “To what extent does the relationship between CEO compensation and earnings management of ASX firms differ between the financial phases of Pre-GFC, during GFC and Post-Global Financial Crisis?” (2) “What role does the strength of firm’s corporate governance play in the relationship? The study highlights the importance of ensuring that the best corporate governance structures are implemented in firms. It recognises the potential threat to CEO compensation through earnings management and therefore, provides regulators with sufficient justification to impose additional accounting disclosure regimes on firms. It also provides useful insights into the use of accounting information for designing more appropriate compensation contracts.

This study employs 300 ASX firms (1,800 firm-years) over a period of 6 years (2005-2010), and clusters them into weak and strong corporate governance firms, on the basis of
a constructed corporate governance index (CGScore); a synthesis of measures of board and committees attributes. The study adopts the Modified Jones Model measure of discretionary accruals as a proxy for earnings management. It employs univariate and panel data fixed effect regression to examine variations in the relationship between CEO compensation (fixed, bonus and total) and earnings management. The study finds that CEO bonus compensation for weak corporate governance firms increases more directly with the magnitudes of discretionary accruals, during the GFC period than pre- and post-crisis periods. Results for the interactive regression analysis suggest that the relationship between CEO compensation and earnings management is stronger with weak corporate governance firms. Furthermore they suggest that compensation is related to earnings management more in financial crisis periods. Nonetheless strong corporate governance structures can adequately mitigate the negative effects of earnings management on CEO compensation. This justifies regulators and policy makers strengthening financial rules and guidelines to improve corporate governance structures and extend their application to all firms.
Statement of Authorship

Except where reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis submitted for the award of any other degree or diploma.

No other person’s work has been used without due acknowledgements in the main text of the thesis.

This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

Oheneba Assenso-Okofo

25 August 2014
Dedication

Glory be to God Almighty.

To the persons who allowed me the freedom and gave me everything they could, in order to pursue my dreams, I dedicate this.

To all who have deferred their dreams and whose hopes remain unseen, this work is dedicated to you.

To you who encouraged me to overcome my fears, to do more and to remain hopeful for the future - This is yours.
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I have come this far by faith leaning on the Lord

*Prayer and work conquer all*
*Prière et travail conquérir tous*
Chapter 1

Introduction

1.1 Statement of the Problem

CEO compensation over the last few decades has received increasing attention from academics, business communities; governments, media, shareholders and the general public (see Chen et al., 2010; Economist, 2007; Collett, 2006). Their concerns relate to the growth of CEO compensation which appears to be increasing the gap between executive pay and that of other employees, causing social inequalities (Orlizky and Swanson, 2010). Furthermore, the concerns are about the fact that CEO compensation is designed to align the interests of both shareholders and executives; yet, the level of compensation in most cases does not reflect corporate performance and consequently, shareholders’ returns as expected. This leads to non-alignment of interests and potentially, worsens agency problems (see Wang et al., 2011; Jarman and White, 2010; Krauer, 2004). The cause of the non-alignments of interest can be explained by rent extraction, agency and positive accounting theories.

Rent extraction theory implies that CEOs are able to extract personal benefits and enjoy excessive compensation levels. It suggests a link between high compensation and the potential influence CEOs exert on pay-setting practices and the level of pay thereby, causing misalignment of principal and agents’ interests (Chalmers et al., 2006; Bebchuk and Fried, 2004). On the other hand, high compensation is interpreted as a result of optimal contracting in a competitive market for managerial talent (Bebchuk and Fried, 2004). Agency and Positive Accounting theories suggest management engages in earnings management to influence compensation (Becht et al., 2003; Watts and Zimmerman, 1990; Jensen and Meckling, 1976). The existing empirical and theoretical
studies identify and provide evidence that earnings management is a potential factor responsible for high compensation (see Klein, 2002; Bushee, 1998; Baber et al., 1991). CEO compensation policies are generally tied to upfront earnings rather than their actual accomplishment (Kumar and Singh, 2013; Clarke, 2010). This consequently entices management to engage in manipulative actions to enhance managers’ interests (compensation) on one hand, but reduces shareholders’ interests on the other. Consistent with the argument above, prior literature has established a strong relationship between CEO compensation and earnings management which exacerbates agency problems (see Bregstresser and Philipon, 2006; Baker et al., 2003; Gao and Shrieves, 2002; Balsam, 1998; Healy, 1985).

The growing anxiety over agency problems has consequently led to an increased focus on mechanisms that check management exploitation practices (Xie, Davidson and DaDalt, 2003; Klein, 2002). Empirical studies over the years show that, shareholders, governments and the general public place a high premium on strong corporate governance as a mechanism that inherently aligns executives’ compensations with shareholders’ interests and significantly reduces manipulation of accounting earnings (Bartlett 2008; Becht et al., 2008; Karpoff, 2001). Studies have suggested that inefficiencies in corporate governance monitoring mechanisms encourage firms to manage earnings (Klein, 2002; Xie et al., 2003). Furthermore, previous studies link economic conditions to how earnings are managed and that firms may be encouraged to engage in earnings management when facing a financial crisis (Charitou et al., 2007; Dichev and Skinner, 2002). This is because during crisis periods firms are unable to achieve their targets and therefore, may have incentives to manipulate earnings (see Ahmad-Zaluki et al., 2011; Iatridis and Kadorinis, 2009; Saleh and Ahmed, 2005). However, whether corporate governance mechanisms existing prior to financial crisis
can effectively mitigate the problems caused by earnings management and reduce opportunistic behaviour is an empirical question. Corporate governance research is often undertaken during periods of financial stability, when investors are willing to overlook compromises in governance structures (Rajan and Zingales, 1998; Mitton, 2002). However, the recent Global Financial Crisis (GFC) has returned corporate governance to the forefront. Bartlett (2008) describes the crisis as a consequence of gross failures in corporate governance. The United Nations (2010) and Kirkpatrick (2009) claim that weakness in governance structures was a primary contributor to the GFC.

The GFC has heightened the debate on corporate governance, CEO compensation and earnings management (Bartlett, 2008). Recent literature asserts strong links between: GFC and earnings management (Dechow et al., 2010; Krauter and Sousa, 2009; Sharfman, 2009); and GFC and corporate governance (Clarke, 2010; Lang and Jagtiani, 2010). Moreover, executive compensation is even viewed as partly responsible for the GFC (see CEO compensation Bebchuk et al., 2010; Core and Guay, 2010; Bebchuk and Spamann, 2010; Fels, 2010; Mintzberg, 2009). This is because rewards for short-term earnings targets encouraged excessive risk-taking (see Nesbitt, 2009; Crotty, 2009; Avgouleas, 2009). A number of compensation components (e.g. bonus) increase with the increase in short-term performance benchmarks (profits and earnings). Given the evidence of potential negative effect of earnings management on CEO compensation during times of financial crisis, and given the importance of corporate governance structures in curtailing such manipulation, a unique setting is provided to examine the ability of corporate governance practices to effectively monitor, align interests and enhance the design of appropriate compensation structure and reduce opportunistic risk.
The discussion above, therefore, provides compelling reasons to address the issues raised. First, unlike the United States of America, cash compensation in Australia represents a substantial variable component of CEO compensation and provides big rewards for superior performance; cash bonuses are based on accounting measures of performance not entirely market-based measures of performance (see Sun and Rath, 2011; Matolcsy and Wright, 2007; Matolcsy, 2000; Murphy, 1999; Izan et al., 1998). However, these targets of accounting measures are manipulable and can be subject to earnings management. Second, the difficulties firms encounter during financial crisis periods may encourage earnings management, which may influence compensation. Compensation during a financial crisis when firm performance and stock prices have declined may still be excessive due to executive self-interest and earnings manipulations (Wang et al., 2011; Chen et al., 2010). Third, the prevailing complexity during times of financial crisis, and the uncertainty this creates for investors, increases the relative importance of strong functioning corporate governance systems (Aldamen et al., 2011; Leung and Horwitz, 2010).

Fourth, extant literature has mainly examined the two-way relationship between executive compensation and earnings management without jointly examining the three issues in one study. These include, for example, compensation and earnings management (Bergstresser and Philippon, 2006; Gao and Shrieves, 2002; Balsam, 1998; Gaver et al., 1995) or compensation and corporate governance (Fahlenbrach, 2009; Ozkan, 2007; Basu et al., 2007; Core et al., 1999) or corporate governance and earnings management (Liu and Lu, 2007; Kao and Chen, 2004; Klein, 2002; Xie et al., 2001). The extant research failed to examine: (i) the sensitivity of the relationship between CEO compensation and earnings management to financial crisis; (ii) moderating effect of corporate governance on the relationship between CEO compensation and earnings...
management; and (iii) the adequacy and efficiency of corporate governance to reduce the negative effect of earnings management during financial crisis. Therefore, the unexpected shock caused by the GFC coupled with the limited studies especially in Australia, provides a unique opportunity to examine the sufficiency and effectiveness of corporate governance mechanisms to safeguard shareholders’ interests against managers taking advantage of the crisis to employ negative earnings management to influence compensation. The research findings will help provide an important public policy perspective on executive compensation, accounting disclosure requirements to minimise earnings management in Australia, highlighting the role of, and what impact the board of directors and remuneration committees may have on the appropriate design and structure of CEO compensation schemes.

1.2 Research Objectives and Research Questions

The principal purpose of this study is to examine the sensitivity of the relationship between CEO compensation and earnings management to the level of corporate governance structures in the periods preceding, during and following the Global Financial Crisis (GFC). The study focuses on variations in the association of executive compensation and earnings management owing to corporate governance structures, rather than whether a relationship exists. It is argued that managers have the economic incentive to manipulate earnings in order to increase their cash compensation under a management bonus plan (see Cheng and Warfield, 2010; Park and Park, 2004; Leuz et al., 2003; Healy, 1985). On the other hand, earnings management is claimed to be increased during a financial crisis. This is because it is more difficult to meet targets during the crisis and therefore, management engages in earnings management to present satisfactory performance (see Argilés-Bosch, García-Blandón and Martínez-Blasco, 2012; Masruki and Azizan, 2012) so as to increase their compensation. This study is
undertaken on the premise that when executives’ compensation is tied to earnings and as a crisis period presents difficulties in meeting business targets, management may engage in earnings management during economic downturn to influence their compensation packages.

To achieve this objective, the following research questions underline the study:

1. “To what extent does the relationship between CEO compensation and earnings management of ASX firms differ between the financial phases of pre-GFC, during GFC and post-GFC?”
2. “To what extent is the relationship between CEO compensation and earnings management of ASX firms moderated by the strength of corporate governance?”
3. “To what extent do financial market phases and the strength of firm’s Corporate Governance jointly affect the relationship between CEO compensation and earnings management of ASX firms?”

The study investigates the core research questions, and addresses, *inter alia*, the pattern of growth of executive compensation and direction of earnings management during the GFC.

**1.3 Motivation and Justification of the Study**

The primary motivation of this study is based on the evidence supporting argument that executives may take the opportunity to engage in earnings management to improve their compensation. This is regardless of the increased awareness and practices of good corporate governance systems. Governments, academics, regulators, shareholders and the public are increasingly concerned about an implicit assertion that earnings management and poor corporate governance mechanisms are positively related (Klein,
This study desires to document empirical evidence on the link between earnings management and managers’ compensation against a background of high demand for strong corporate governance practices. The literature also suggests that executives manage earnings during the financial crisis and therefore, it is important to investigate how the GFC impacted on the relationship between compensation and earnings management. The study complements the effort of practitioners and regulators to address on-going problems. Despite the importance of good corporate governance mechanisms, no known studies have directly examined the moderating effect of corporate governance on CEO compensation and earnings management during the GFC, especially in Australia. The motivations are therefore, summarised as follows:

1. The limited study and the desirability of documenting empirical evidence on the nature of the relationships of CEO compensation and earnings management when affected by different economic conditions and the level of corporate governance in an Australian context.

2. The increasing interest of the academic and business communities in the rapid growth of executive compensation without a corresponding increase in shareholders’ wealth, coupled with the academic debate on the moderating effect of corporate governance on compensation and earnings management.

3. Moreover, the concerns expressed by practitioners, regulators, and standard setters regarding corporate governance ability to limit opportunities created through earnings management and its significant influence and effects, on compensation.
The unexpected shock, caused by the GFC, created the ideal setting in which to examine the impact of corporate governance practices on the relationship of executive compensation and earnings management for two reasons. First, the timing of the GFC is significant in that it followed other exogenous shocks such as the Asian Financial Crisis in 1997 and the corporate collapses of companies in the early 2000s, both of which serve as comparison benchmarks. Second, in response to these prior challenges, market regulators required the establishment of formal corporate governance structures via rule-based, as well as principle-based practices (Sarbanes-Oxley Act 2002; ASX Corporate Governance Council, 2003). The regulated governance systems and practices are expected to provide monitoring and informational benefits to companies, managers and investors to better withstand future financial crises. It is, therefore, justified to examine whether the governance systems and practices could in practice monitor executives’ behaviour during the GFC.

1.4 Scope of the Study

This study focuses on Australia, a developed country in the Asia-Pacific region. Australia as is expected to have a strong corporate governance structure that can prevent the manipulation of earnings. However, the Australian Stock Exchange (ASX) governance guidelines strictly apply to only the top 500 firms out of over 1900 firms. Australia also has reliable data on compensation, although the ASX mandates only the top 300 listed companies to make available to the public compensation report. Furthermore, the focus is on Australia because of the shift in corporate governance from legislative regulation to encouraging self-regulation (Hill, 2009).

This study does not consider compensation of all executives but rather the Chief Executive Officer (CEO) of Australian firms for varied reasons. First, the CEO is
considered to be the main strategic decision-maker and therefore practitioners and academics pay high attention to CEO compensation. Second, the CEO’s position at the apex of the firm makes him or her the main strategist for the firm and his or her compensation may have a significant impact on corporate strategic decisions (Datta et al., 2001; Bliss and Rosen, 2001), the value development of the firm (Morck et al., 1988; McConnell and Servaes, 1990) or the compensation policies for middle and lower-level managers (Gomez-Mejia, 1994). Even though other executives may have some influence in corporate decisions, CEOs have relatively more influence (Hallack 1997; Core, Holthausen and Larcker, 1999; Grinstein and Hriba, 2004). It is also due to the data availability and differences in incentives between CEOs and other executives. However, the terms CEO, Executive and Manager are used interchangeably to refer to same person, throughout this thesis, except where specifically stated to denote other officers.

The other consideration in terms of scope of this study is the use of cash compensation of CEOs; comprising the basic salary and the bonus. This study uses cash compensation but not necessarily, including options/shares-based incentives for the following reasons. First, cash compensation has been a major component in the compensation structure of CEOs, particularly in Australia (see Rankin, 2010; Guerdon Associates, 2008; Business Council of Australia, 2004; Matolcsy, 2000; Murphy, 1998a).

Second, it is also claimed that due to compensation-maximising considerations executives have several choices to shift and boost current earnings (see Reitenga et al., 2002; Guidry, 1999; Holthausen, 1995; Healy, 1985). Consequently, bonus compensation is strongly linked to accounting measures which are manipulable (earnings management) (see Matolcsy, 2000) instead; equity-based compensation is linked more to market share price (Core, Guay and Larcker, 2003). Finally, it is claimed
that the share price which equity incentive is tied to is determined by the market conditions and not executives’ manipulation (Fels, 2010).

This study justifies the period for which this study covers. The study examines the relationship between CEO compensation and earnings management from 2005 to 2010 (inclusive). This time span in Australia represents periods just before the GFC to when there was stability and growth (see Golub and Crum, 2009; Frydman and Jenter, 2010; Raviv and Landskroner, 2009). Consequently, the period has been sub-divided into three periods of two years each; two years before the official GFC (2005 and 2006) which are considered to be the growth period, and the crisis period (2007-2008) which is classified as the economic contraction period. The two years (2009 and 2010) after the GFC represent the recovery and growth period to reflect the immediate effect of the GFC (see Golub and Crum, 2009; Frydman and Jenter, 2010; Raviv and Landskroner, 2009). This division is important to compare the relationship between CEO compensation and earnings management before, during and after the GFC. Moreover, these phases in recent economic history demonstrate the influences of different economic conditions on the relationship between CEO compensation and earnings management.

The first major reason for beginning in 2005 is because the corporate governance recommendations by the ASX Corporate Governance Council which applied for the majority part of the period were released on 31 March 2003. However, companies were required to comply only from 1 January 2005. Even though these recommendations are not compulsory for all listed companies (only for the S&P/ASX 300), listed companies need to explain any departure from these recommendations. Second, the 2005 signifies the post Corporate Law Economic Reform Program Act, 2004 (CLERP 9). The CLERP
9 is the statute on Corporate Law Economic Reform Program passed by the Australian Parliament in 2004 on Audit Reform and Corporate Disclosure and became law on 1 July 2004. The CLERP 9 also applied from about same time as the corporate governance recommendations.

1.5 Contribution of the Study

This study demonstrates the moderating effect of corporate governance structures on the relationship between CEO compensation and earnings management in an environment which differs from prior studies. Therefore, this study contributes to the academic debates and the strand literature and practice in several ways.

First, this study significantly contributes to the limited, yet growing literature that addresses the level of corporate governance and its effectiveness on moderating the relationship between CEO compensation and earnings management. The only studies that come close to the intent of this study, and jointly examine the relationship between corporate governance, executive compensation and earnings management are Cornett, Marcus, and Tehranian (2008) and Cornett, McNutt, and Tehranian (2009). The studies, Cornett et al., (2008) and Cornett, et al., (2009) examined the issues of earnings management, compensation and corporate governance. However, the focus was to test how the various corporate governance variables (institutional ownership, board characteristics, and executive compensation) influence earnings management. Their approach did not address the general concern about whether firms are classified in terms of strong (good) or weak (bad) governance. This study addresses this issue by creating clusters of firms with ‘strong’ and ‘weak’ corporate governance structures on the basis of a designed corporate governance index. Therefore, this study fills an important research gap.
Second, a major contribution of this study is the explicit attempt to examine and understand the sufficiency or effectiveness of corporate governance mechanisms to monitor the effect of earnings management on CEOs compensation during unusual periods or unique environment (GFC), when creditors, investors, firms and the market as whole, behave differently. The result is expected to highlight the role corporate governance may play on the appropriate design and structure of CEO compensation. The study forms part of contemporary academic debates advocating for efficient monitoring of managers, through corporate governance (Osma, 2008) and addressing the executive compensation issues. Corporate governance research is often undertaken during periods of financial stability, when investors are willing to overlook compromises in governance structures (Rajan and Zingales, 1998; Mitton, 2002). The prevalent difficulties during times of financial crisis, and the uncertainty this creates for investors, increase the relative importance of the quality of the corporate governance systems and practices (Larcker et al., 2007; Klein, 2002).

Corporations need to satisfy shareholders and attract potential investors by adopting good corporate governance practices. The results should highlight the importance of good corporate governance practices and demonstrate the benefits of imposing governance regulations and provide regulators with sufficient justification to impose additional corporate governance requirements on firms. The outcome of this empirical research will therefore, be relevant in the revision and formulation of optimal governance structure, new regulations and guidelines for improved corporate governance practices. The findings will contribute to the debate of enforcement of additional corporate governance requirements.
Third, the results are expected to provide useful and practical insights and better understanding into the use of accounting information for designing more appropriate and efficient compensation contracts for executives in Australia. This study strengthens the understanding of earnings management activities and its implications for CEO compensation. This study is beneficial as it recognises the potential CEO compensation threat through the effects of earnings management. A common assumption in compensation-based studies of earnings management is that managers use this flexibility to distort financial information in order to maximise their own utility (Sun and Rath, 2009). Therefore, an examination of the effect of earnings management on CEO compensation may prompt regulators to prescribe an optimal level of management judgement and discretion by considering additional disclosure requirements for firms. The findings will help provide an important public policy perspective on executive compensation in Australia.

Finally, this study benefits through a number of practical implications. The accounting measurement is becoming an important issue due to deliberate manipulation of accounts to achieve self-interest. The outcomes of this study may enhance controlling mechanisms and assist regulators to improve monitoring roles and protect firms from the negative behaviour of executives.

1.6 Structure of the Thesis

This study is divided into seven chapters with each chapter covering a specific component. This chapter has discussed the background and rationale for this study, outlined the study motives and specific research questions. The contributions made by this study have also been highlighted. The remainder of this thesis is organised as follows.
Chapter 2 discusses the environment of CEO compensation, corporate governance regime and earnings management practices in Australia. It emphasises the regulatory framework including agencies, organisations and regulators and role their role and influence in the designing executive compensation in Australia.

Chapter 3 reviews the extant literature on the three issues in the study, namely executive compensation, earnings management and corporate governance. The chapter also reviews the empirical studies on the pattern of CEO compensation and earnings management and during the Global Financial Crisis. The chapter further explores empirical studies on the possible role of corporate governance in restraining the negative effect of earnings management on CEO compensation.

Chapter 4 describes the conceptual framework and the theoretical basis of the study. It highlights agency theory and positive accounting theory as suitable for this study. Drawing from these theories, hypotheses and empirical studies reviewed in previous chapters, the chapter further develops the hypotheses for this study.

Chapter 5 justifies the research design including methods, procedures and data analysis issues relating to the empirical test of the study. It takes account of data collection, sampling process, model development and data analysis procedure. The definitions and measurements of dependent, independent and control variables are also outlined.

Chapter 6 presents the empirical results of this study. The findings are discussed in detail including the descriptive and regression results of the statistical analysis. Further the chapter presents results of the sensitivity tests and discusses some basic econometrics
problems including incomplete sampling, omitted variables, self-selection bias, and
endogeneity and robustness tests.

Chapter 7 concludes the study by summarising the whole thesis. Furthermore this
chapter outlines the implications for policies and practices that may be of interest to
regulators, policy makers, academic researchers and practitioners. Finally, the
limitations of study are acknowledged and suggestions for future research are provided.
CHAPTER 2
The Regulatory Environment of CEO Compensation in Australia

2.1 Introduction
This chapter discusses the regulatory environment and the structure of executive compensation with respect to Australia. This is to set a context or framework for a complex and large area of study. This study defines regulatory environment to include the various institutions, regulations, guidelines, requirements and rules that influence the practices of executive compensation in Australia. The crucial role of the regulatory environment is to ensure the setting of appropriate compensation and its disclosure for the benefit of shareholders and other various stakeholders. In the modern corporate world, ownership and control are separate and may lead to agency problems. Consequently, compensation contracts are set to address the agency problem and therefore, it is appropriate to establish oversight bodies that set the rules of engagement.

The remainder of this chapter is divided into eight sections. After the Introduction, Section 2 provides background information on the practices and composition of executive compensation. It also explains the process and bodies involved in setting executive compensation. Section 3 identifies the executive compensation problem. The debate to regulate or not to regulate follows in Section 4. Section 5 examines the tools for regulation. There have been various attempts to constraint executive compensation and so the section examines the international and national regulations of compensation. Section 6 examines how executives are able to influence compensation in the face of regulation. Section 7 looks at how the corporate governance system can mediate executive compensation problems, while Section 8 summarises the main points made in the chapter.
2.2 Understanding the Practices, Processes and the Composition of Executive Compensation

This section highlights some basic characteristics of CEO compensation and how compensations are set. Agency theory acknowledges agency problem which is based on three assumptions, namely: agents as self-interest, as risk averse, and the interests of the agent and the principal indicating disparity (Gomez-Mejia and Wiseman, 1997). Consequently, agency theory suggests reasonably effective compensation models that if appropriately designed; align the interests of both agents and principals and therefore reduce agency conflicts (Abowd, 1990; Leonard, 1990; Kaplan, 1994). The structure of the compensation package also seeks not only to recruit the best executives but in addition, retain, motivate and encourage them to make decisions that achieve high returns and thereby, increase shareholder value. For example, while the basic salary may attract the best executives, bonuses may be set to motivate executives to achieve high performance. The individual CEO's rewards are typically based on a number of factors including company size, company’s bottom line, shareholders' returns and CEO’s performance.

2.2.1 Compensation Setting Bodies

The Board of Directors is an appointed body that acts in the best interests of shareholders and is traditionally responsible for the design and implementation of executive compensation contract. However, Australia has a number of institutions which have oversight responsibilities over executive compensations and practices. These institutions include the Australian Securities and Investments Commission (ASIC), Australian Securities Exchange (ASX), Australian Institute of Company Directors (AICD), Australian Shareholders’ Association (ASA), Australian Prudential Regulation Authority (APRA) and Financial Services Forum (FSF). These institutions are obliged to
rely on disclosure of remunerations arrangements. Others are predominantly prudential regulators and may have the power to go beyond disclosure to ensure compliance with both the intent and substance of prudential requirements. The detailed operations of these intuitions are beyond the scope of this study.

The Board of Directors’ effectiveness to regulate compensation is contingent, partly on the board’s ability to set the compensation at an arm’s length, without any influence from the executives. This role is, however, delegated to a sub-committee, the remuneration committee. If all conditions are met in setting up this committee, compensation is expected to be set at ‘arm’s length’, independent of executives. Moreover, aside from the independence of the remuneration committee, it usually has experts who are able to design an appropriate compensation contract to achieve a balance for both principal and agents’ interests. It prevents conflict of interest in the process. In Australia, many listed firms also contract the services of remuneration consultants who advise the remuneration committee to design an appropriate compensation contract. Remuneration consultants provide services to enhance the independence and expertise required for the process of setting the compensation contract.

2.2.2 Composition of Executive Compensation

Executive compensation packages normally consist of multiple components to reflect the various objectives to be achieved. Despite substantial heterogeneity in pay practices across firms, Australian companies generally compensate their top executives with a mixture of cash and company shares (see Merhebi et al., 2006; Matolcsy and Wright, 2006). Most CEO compensation packages consist of five basic components: base salary, as well as incentive payments in the form of cash (cash bonus) that may or may not be
based on short and long-term performance goals and stock (stock options, stock-appreciation rights, or restricted stock) which is normally linked with long-term performance. In addition, CEOs often receive contributions to defined-benefit pension plans, various perquisites (e.g., the use of the company aircraft or country club memberships). Even executive benefits like various types of insurance (life, medical, dental) and interest-free loans for the purchase of housing and in case of their departure, severance (generous retirement plan benefits) payments are made. The relative importance of these compensation elements has changed considerably over time. Considering briefly the component issues facing executive compensation, the schemes mentioned above are discussed further in the ensuing paragraphs.

2.2.2.1 Basic Salary

One of the obvious and yet most important components of executive compensation is the basic (fixed) salary. Employers intend to bring on board employees who can add value to the company and therefore cannot afford to underpay employees as they may lose such employees to their competitors. Basic salary as a fixed component provides executives with a stable source of income. This is set at competitive levels by the board or compensation committee which engages in arm’s length contracting with executives. This is to encourage an inherent but overt employment contract (Gillan, Hartzell, and Parrino, 2005). Some of the determinants of basic salary are size of the firm (Murphy, 1999), experience and qualification of the executives, but these can be benchmarked against peer firms. Although it does not have much relation to management performance at the time of setting, most other components are based on it. The increase or otherwise of other components within the compensation contract are normally contingent on the base salary (Murphy, 1999).
2.2.2.2 Cash Bonus Compensation

Cash bonus component is a significant amount of total of executive compensation (Jackson et al., 2008). It is generally formula-driven and based on some performance criteria depending on executive’s role. The performance criteria are predetermined internal or external performance measures. It is, therefore, paid when such performance measures are met by executives. Evidence exists that the majority of these predetermined measures are based on accounting performance (Murphy, 2001). Using accounting measures is partly due to the fact that as part of financial statements preparation, internal control mechanisms intensely scrutinise such earnings and therefore are thought to be more reliable (Indjejkian, 1999). Another important reason for the use of accounting measures is that bonuses based on external measures (share price, etc.) suffer from market variation. The CEO may be punished for circumstances beyond his/her control (see Sloan, 1993; Davila and Penalva, 2006).

Cash bonus plans are designed to improve firms’ short-term performance and are paid annually based on a year’s performance (Murphy, 1999). Like any appropriate pay contract, the bonus contract take account of performance standards, how performance is measured, and the relationship between the performance measures and the bonus. This, therefore, presupposes that executive is not paid bonus until the standard is met. The basic salary and short-term incentives or bonuses when combined can be referred to as Total Cash Compensation (TCC). However, it is instructive to note that while salaries and other fixed compensation components are useful for attracting and retaining talent and, hence, are not generally contingent on executive performance, bonuses and long-term incentive plans are subject to executive performance as a form of incentive compensation.
An organisation may use more than one plan. This study examines the annual reports of the selected firms to identify their various short-term compensation plans. Various schemes are the Target Based Incentive Plan which is defined as financial targets agreed in advance with executives on a year by year basis. A Bonus Plan provides for discretionary distribution of extra cash rewards based on meeting budgeted company performance targets. A Profit Share Plan gives cash distribution of a given percentage of net profit beyond a predetermined level. The remaining plans have been used by only 4% and 2% of the 300 organisations sampled, respectively. Table 2.1 summarises the various short-term compensation plans for the 300 firms chosen for this study.

<table>
<thead>
<tr>
<th>Types of short-term compensation Plan</th>
<th>Firms applying Schemes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target based incentive plans</td>
<td>100</td>
<td>33.33%</td>
</tr>
<tr>
<td>Bonus plans</td>
<td>120</td>
<td>40.00%</td>
</tr>
<tr>
<td>Profit share plans</td>
<td>30</td>
<td>10.00%</td>
</tr>
<tr>
<td>Gain share plans</td>
<td>25</td>
<td>8.33%</td>
</tr>
<tr>
<td>Non-cash plans</td>
<td>17</td>
<td>5.67%</td>
</tr>
<tr>
<td>Key contributor plans</td>
<td>8</td>
<td>2.67%</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100%</td>
</tr>
</tbody>
</table>

2.2.2.3 Long-term Incentive Plans (LTIP)

Long-term incentive plans are designed to encourage high performance by executives so that they contribute to the firm’s sustained value. It creates incentives aligned with long-term value creation and the time horizon of risk. It may consist of stock options or stock grants which give the executive the right to purchase stock at a specified time. It is, therefore, more like market oriented incentives and firms’ long-term incentives compensation to executives. Long-term incentive plans usually have a measurement
period of more than one year, but this is generally extended to three to five years. The recipient has the right to transfer shares and realise its value, a period known as the vesting period (see Murphy, 1999; Cheng and Warfield, 2005).

Long-term incentive plan in the view of agency theory encourages executives to meet the objectives of the firm as a whole and at the same time enjoy personal financial rewards instead of seeking self-interest. It allows executives to own part of the entities they manage. Other benefits given to executives have varied objectives, for example, pensions, supplemental executive retirement, and deferred compensation plans not only to help retain executives but also encourage executives to have a sense of ownership in the company. Moreover, retirement plans encourage executives to take the necessary risks even though at the peril of their jobs so as to make the most of shareholder value.

However, the complexity of the tax and accounting rules for stock compensation affect the way executives transact stocks. Despite the importance of equity incentives in executive contracting, there is a great deal of uncertainty about how to measure incentives and how firms determine optimal incentive levels. In particular, there is considerable debate over the correct basis to use in assessing incentive levels, and at a more fundamental level, how to value executive equity holdings making the valuation of the long-term components more problematic.

2.3 The Great Debate: Regulate or not to Regulate

This chapter assumes the definition of regulation as an intentional activity of attempting to control or order or influence behaviour (Parker et al., 2004). By extension, the adoption of this definition means that regulation of executive compensation will be an attempt to influence or control the operation of compensation models by governments or
any other body other than those who set the contracts and the market forces. There is an ongoing debate between two schools of thought on the regulation of compensation. One group calls for more substantive constraints on compensation but the other holds that there should rarely be any regulations on setting compensation parameters. Critics against regulation of executives’ compensation argue that market mechanisms operate effectively (see Core, Guay and Thomas, 2005; Kaplan, 2008) and therefore, believe in the expression, ‘if not broken, do not fix’. It is argued that the traditional executive pay model using cash and stock incentives continues to work for the vast majority of companies and that CEO pay is already self-correcting (Dine, 2006). Compensation contracts motivate executives to ensure their companies function strongly and, therefore, need no regulation. It is even claimed that executives may still be able to evade the regulations anyway (Dine, 2006).

On the other hand, critics against non-regulation argue that the usual focus of corporate governance to align the incentives of managers and shareholders does not work sufficiently to constrain firm risk-taking and therefore regulatory intervention is needed (Jarque, 2008). Regulation can also be necessary where there is diversity of shareholders within and also across firms and therefore, coming together with common voice against compensation abuses is challenging. Additionally, executives in maximising their compensation can perform a myriad ways which are not in the interest of shareholders. Executives’ ability to influence their compensation while not improving shareholder value suggests that regulatory intervention is justified to provide systemic stability against the inherent fragility of executive compensation policies (see Crystal, 1991). This has fuelled the call for authorities to do more to curtail the inefficiencies in executive compensation practices and impose new regulations to limit executive compensation. It is instructive to note that each side of the debate can be justified.
However, it is the view point of this study that market forces should be allowed to operate effectively. Nonetheless where managers are inclined to deviate from the core duty of achieving shareholder value, regulations are necessary to complement the efforts of market forces. This is where the role of corporate governance is crucial (Maher and Andersson, 2000). It is worth mentioning that effective monitoring should be in place to check executives as they can essentially set their own pay through their influence over corporations’ boards of directors of.

2.4 Traditional Means for Regulation

This section enumerates a number of strategies that are employed as tools to regulate executive compensations by the international community as well as what pertains in the three countries chosen for this study. Most of the tools are intended to regulate the level of compensation rather than scrutinise the executives’ manipulating behaviour of earnings to influence their compensation. It is worth noting that the type of tool or strategy that is applied depends on the country and its intended objective. Conversely, it can be argued that a common problem calls for a common solution. Executive compensation has been identified as one of the causes or contributing factors to the global financial crisis. It is claimed to have played a substantial, perhaps dominant, role in it and the resulting recession by encouraging excessive risk-taking (see Core and Guay, 2010; Fels, 2010). However, the GFC raises the question of whether the traditional tools of corporate governance can adequately address potentially perverse effects of executive compensation. Consequently, both global and individual countries have initiated adopted certain tools regulate this worldwide subject of executive compensation.
2.4.1 International Approaches to Executive Compensation Regulation

In April and September 2009, two G20 summits were held in London and Pittsburgh, US to substantially address the issue of executive pay. The development of an international approach to executive pay reflects a growing post-GFC conviction that the regulation of executive pay and the regulation of financial markets in general, required the development of effective international governance structures. Policy makers, governments and regulators around the globe are becoming increasingly concerned about the abuse of executive compensation practices. Consequently, there have been a number of regulatory approaches to help develop policies that regulate executive compensation worldwide. Examples of the use of varied tools to regulate executive compensation abound in many countries. One such tool employed globally is the use of corporate governance system. Corporate governance best practice seeks to provide the mechanisms which align the interests of management with those of shareholders.

Therefore, where managers are inclined to deviate from the core duty of achieving shareholder value, the role of corporate governance becomes crucial (Maher and Andersson, 2000). It is further argued that the reliability on accounting earnings for decision-making is contingent on the ability of the monitoring systems to control managers’ opportunistic behaviour (see Dechow et al., 1996; Wild, 1996; Gul and Tsui, 2001). This study argues that the anomalies surrounding executive compensation is partly due to managers’ behaviour of manipulating earnings to influence their compensation. The disconnection between executive compensation and shareholder value which arises as a result of executives’ capacity to manage earnings could be checked with a good corporate governance monitoring system (Klein, 2002b; Peasnell et al., 2000a).
The review of the extant literature on corporate governance role indicates that an effective board with an independent non-executive director, independent remuneration committee, audit committee may monitor executive behaviour effectively (see McMullen, 1994; Dechow et al., 1996; La Porta et al., 1998; Choutou et al., 2001; Klein, 2002a; Peasnell, Pope, and Young, 2005; Harrast and Olsen, 2007; Kaplan et al., 2009; Persons, 2009). This opinion is maintained by the Principles of Good Corporate Governance (Sarbanes-Oxley Act, 2002; ASX Best Practice Corporate Governance Principles, 2010). The ownership structure, depending on the type (large, blocked, institutional shareholders), to some extent has some control over the company’s board and consequently is able to control the behaviour of the executive. The rise of organised shareholder activism and many institutional investors act like public interest groups that monitor executives. These groups represent a crucial constituency for companies to convince prior to seeking shareholder approval on company issues including executive compensations. This is because large shareholders have a strong incentive to maximise the company’s wealth and protect their interests (Shleifer and Vishny, 1997).

The corporate governance system recognises the establishment of a board of directors whose assigned responsibility it is to monitor the activities of executives in the interest of shareholders. Additionally, through the compensation committee the board sets appropriate and supportable compensation contracts for executives. As a monitoring body, therefore, it is able to regulate executive compensation. The composition (the ratio of non-executive directors versus executive directors) and the expertise of the board are also crucial elements for maintaining a balance between the interests of executives and shareholders. This practice is widely encouraged by regulators around the globe to keep in check the behaviour of executives including influencing their compensation (see Sarbanes-Oxley Act, 2002; the various Guidelines of Best Practice Corporate
Governance Principles). As laudable as this practice is, the OCED (2009) attributes the financial crisis to failure and weaknesses in corporate governance. Moreover, the global financial crisis of 2007/8 is being blamed on the abuse of executive compensation (Fels, 2010; Core and Guay, 2010). It can, therefore, be argued that the weakness in the corporate governance system contributes to inconsistencies in executive compensation.

The establishment of the Financial Stability Board (FSB) at the international level in April 2009 was to enhance global regulation of executive compensation. This board was set up by global leaders to ensure good practice and regulate executive compensation through the promotion of co-ordination and information exchange among authorities responsible for financial stability. The members of the FSB have agreed to advance some principles that seek to extensively regulate executive pay at the national level. It is to push countries into action, advise on and monitor market developments. Their implications for regulatory policy ensure best practice in meeting regulatory standards. Countries including the US, France, Australia and Singapore are represented on the Financial Stability Board.

There are other significant institutions including but not limited to standard-setting bodies, International Monetary Fund, Organization for Economic Co-operation and Development, World Bank, International Accounting Standards Board, Organization of Securities Commissions, and Committee on the Global Financial System. The FSB is charged with the implementation and monitoring of some basic principles including avoiding multi-year guaranteed bonuses, ensuring that executive compensation aligns with performance and risk, compensation policies are made transparent by disclosure, encouraging appropriate claw back and significant portion of variable compensation be deferred or be converted to stock or stock-like instruments for long-term value creation.
The FSB is again charged with the responsibility of guaranteeing the independence of compensation committees while formulating and reviewing compensation policies for the benefit of the company. This effort by global leaders is anticipated to help regulate executive compensation.

Governments through legislative processes are employing law to regulate executive compensation. A major legislative tool being used by many countries is legislative requirements of disclosure. This technique of disclosure of salary arrangements is employed for companies to disclose details of compensation payment in the annual report in order to encourage moderation of executive pay levels. This aids company stakeholders to verify whether compensation is fair or not and thus creates transparency (see Schildknecht, 2004, p. 140). With such transparency, stakeholders are better informed and governance watchdogs can make it increasingly difficult for companies to hide or disguise their compensation decisions. The Directors’ Remuneration Report Regulations 2002 in the UK introduced the requirement (now known as the Companies Act 2006), for companies to disclose compensation details for the benefit of stakeholders (Landy, 2008). Other countries including China, the US, Canada and Australia have also legislated for companies to disclose compensation.

It is also becoming an accepted practice in many jurisdictions for shareholders to be given a greater voice in setting executive compensation. This empowerment of shareholders is evident in the United States, for example, where shareholders must approve all equity compensation plans, and can simply vote against the issuance of any equity plans. Commonly so in many regimes, shareholders at Annual General Meetings are able to vote to approve the compensation of executives (Ribstein and Butler, 2008; Krishna, 2008). This rule is similarly being implemented in many regimes including the
Netherlands (2004), Australia (2005), Sweden (2006), Norway and Denmark (2007) and Germany (2009), UK (2002), US (2009) among others (see Cheffins and Thomas, 2001; Conyon and Graham, 2010; The Dodd-Frank Act, 2010; EU Commission, 2002). This rule is commonly termed “say on pay”. While some countries such as Australia, Spain, the UK and US have adopted it as a non-binding advisory vote rather than one that obligates the company to respond, others such as Denmark, Norway and Sweden have made it mandatory. In the Netherlands the say-on-pay vote is binding but limited to new remuneration policies or changes to existing policies. Some of these countries, i.e. Australia, Norway, Sweden and the UK backed by law have adopted an annual vote but the frequency of say-on-pay votes in the US, is held at least once every three years.

The advent of “say on pay” in the UK, for example, has increased interest in compensation and corporate governance issues with a number of some successes (Cadman et al., 2010). For example, in July 2001, 10% of Vodafone Company’s shareholders voted against £13m in shares for CEO Sir Chris Gent, while 30% abstained (Ferri and Maber, 2009). Again, in May 2003, when the share price of Royal and Sun Alliance had just dropped, 28% of shareholders voted against a £1.44m severance pay for CEO Bob Mendelsohn (Cai and Walkling, 2009; Keasey, 2006). Around the same period, Jean-Pierre Garnier, the CEO of GlaxoSmithKline faced a similar fate when shareholders (50.72%) voted against a £22m bonus salary and stock severance package (Ferri and Maber, 2009). Shareholders’ vote on pay may be non-binding especially in the UK; however, ignoring the shareholders’ say-on-pay mandate incontestably has negative consequences (Alissa, 2009; Ferri and Maber, 2009). It is instructive to note that voting results on say-on-pay are public record and, therefore, serve as easily comparable, quantitative, single-point scores by which to assess shareholder satisfaction as a whole (Cheffins and Thomas, 2001; Carter and Zamora, 2009). It is possible that the
market price reflects shareholders’ dissatisfaction with a company’s pay policies or practices or even ‘naming and shaming’ of companies (Zeitlin, 2005). Another implication is that such a situation is likely to place a level of ‘moral’ pressure on the board and may even affect their re-elections, a situation directors will want to avoid (Conyon and Sadler, 2010).

Another strategy used by some regimes to regulate executive compensation is tax restrictions (Hartman, 2002). Compensation of individuals is taxable at a high individual rate. This tool, normally termed as progressive taxation affects executive compensation, albeit, it is a general tool that affects other individual highest earners whose income over a certain threshold is taxed at a greater percentage (Hartman, 2002). For example, the Baltic States have a flat tax system to control executive incomes. However, executives whose part of their income is converted to long-term incentive (stocks) reduce their tax obligation. Subject to the tax restrictions is another equally hard method which is salary caps. The capping of executive compensation is an attempt to legally restrict limits on levels of executive compensation and the amount that an individual person may legally earn (Tuna, 2009). This idea was introduced in the US in early 2009 by the Obama administration. It was also suggested in September 2009 at the G-20 summit in Pittsburgh by the French President Nicolas Sarkozy who suggested a limit on bonus payments. Other countries adopting this policy are Russia and China who imposed caps on levels of executive pay in 2009. With this strategy both maximum and minimum amounts are set to prevent individuals from earning outside the range set (Dietl, Duschl, and Lang, 2010).

The use of common techniques and approaches to regulate executive compensation at the international level may not be effective. The reason is the high degree of diversity in
governance systems across the world. There is lack of uniformity in culture, history, political systems, legal codes and processes, the miscellany of taxation regimes and other legislative requirements have impaired the extensive use of the approaches collectively at the global. The joint action needed to implement these techniques to achieve the goals may be missing because governance systems are not uniform (see Osma and Noguer, 2007; Scharpf, 1988). Notwithstanding this, the insistent application of political and public pressure coupled with the process peer review may bring about its effective implementation (see Hodson and Maher, 2001).

2.4.2 Australia’s Approach to Executive Compensation Regulation

Though the international collaboration on regulations of executive compensation is desirable, achieving it is very complex. It is partly because executive compensation as an element of corporate governance system is unique to specific countries (OECD, 2004). This section shows the importance of scrutinising the Australian regulations on executive compensation (see Filatotchev and Boyd, 2009; Garcia-Meca and Sanchez-Ballesta, 2009; Osma and Noguer, 2007). An examination of the Australian regulation regime on executive compensation is in many ways similar to the techniques being implemented across the globe. Australian executive compensation has experienced significant regulatory reforms over the years. The application of government legislation, corporate governance mechanisms, corporate self-regulation requirements and shareholders’ activities are strategies to regulate executive compensation. The Australian regulation of compensation provides rules for activities such as remuneration practices, disclosure, engagement and voting (see Sheehan, 2009).

The main sources of executive remuneration regulation in Australia are the Corporations Act 2001, the amendments to the Corporations Act 2001 as found in the CLERP 9 Act
of 2004 and the ASX listing rules and corporate governance. The Corporations Act 2001 had little to offer by way of executive compensation regulation. The Act generally prohibits a public company from providing a financial benefit to a related party which includes directors of public companies without shareholders’ approval. However, this does not affect the executive remuneration as section 211 of the Act does not require shareholder approval before a financial benefit to a related party as an officer or employee of the public company.

Moreover, there is a provision of the Act on executive remuneration which allows either one hundred or more shareholders, or shareholders controlling at least 5% of the outstanding voting stock, to require that the company disclose director remuneration. The Act also allows liquidators of a failed company to reclaim payments made to directors within four years of the company’s liquidation. Due to the limitations of the Corporations Act, there were amendments as contained in the Corporate Law Economic Reform Program Act 2004 known as CLERP 9. The CLERP 9, Act 2004 was introduced as Australian legislative reform to executive compensation regulations. The Act among others requires for an advisory vote on executive remuneration at the annual general meeting. It also requires a discussion be held on executive remuneration policy and terms in the annual directors’ report.

The CLERP 9 Act requires that a resolution to adopt a remuneration report of a listed company must be put to vote at the annual general meeting, a requirement called ‘Say on pay’. However, the vote on the resolution is advisory only and does not bind the directors or the company. In spite of the non-binding status of the resolution, the explicit goals of the Australian provision were to provide shareholders with a greater voice in relation to remuneration issues and to encourage greater consultation and information
flow concerning compensation policies between directors and shareholders. It is now required to discuss the board’s policy for determining the nature and amount of remuneration of both directors and executives, an explanation of the conditions on which all or part of an executive’s or director’s remuneration might be based (i.e. performance bonuses). This includes the details of the remuneration packages for all directors and for the five highest-paid executives in the annual directors’ report.

The Australian Securities Exchange (ASX) listing rules is another source of executive compensation regulation, especially for listed companies ASX Corporate Governance Council, 2010). However, Rule 10.17 is the only listing rule concerning executive remuneration. It requires approval by the shareholders for any increase in the total amount of directors’ fees. The executive’s salary or a director’s fees must also not be tied to the company’s operating revenue and that non-executive directors may only be paid a fixed sum. Rule 4.10.3 of the listing rules requires each listed company to include in its annual report a statement disclosing the extent to which the entity has followed the best practice recommendations set by the ASX Corporate Governance Council. Any violations of the ASX Listing Rules can result in suspension of quoting a company’s securities or removal from ASX.

Another source of regulation on executive compensation in Australia is the corporate governance recommendations for best practice. The Australian corporate governance system is influenced the long history of British law (Millar et al., 2005). An important characteristic is the application of common law which guarantees business environment which protects the investor (see Miller et al., 2005; Osma and Noguer, 2007; Sharma, 2004). It is, therefore, expected to impact on executive compensation. The ASX corporate governance principles regarding executive remuneration include “comply-or-
explain” recommendations that each listed company’s board establish a remuneration committee. It requires each listed company to clearly distinguish the structure of non-executive directors’ remuneration from that of executive directors and senior executives. Each listed company is to provide information on executive remuneration, including information on the remuneration committee and retirement benefits for non-executive directors in its annual report (ASX, 2010).

In a more recent development, just after the 2007/08 GFC the Australian federal Labour government asked the Productivity Commission to review Australia’s existing executive remuneration regulatory framework in its entirety, because it had failed to address rising executive compensation levels. The Australian government in March 2009, based on the recommendations of the Productivity Commission, proposed widespread executive compensation reforms which were not limited to firms seeking government assistance after the GFC. The federal government consequently proposed new limits on ‘golden handshakes’ which would require shareholder approval for a payment greater than one year’s base salary against the previously limit of seven years’ base salary. Companies had to claw back bonuses from their executives when their accounts were materially misstated, under federal government changes designed to realign executive pay with profit performance (Australian Government Productivity Commission Report, 2009).

Other proposals are a ‘two strikes’ rule which gives shareholders the right to vote for a spill of the board of directors. In June 2010, a regulation put in place processes to trigger a re-election of a Board where a 25% "no" vote by shareholders to the company's remuneration report had been recorded in two consecutive annual general meetings (Monem and Ng, 2013). When the second "no" vote is recorded at an AGM, the meeting will be suspended and shareholders will be asked to vote on whether a spill meeting is to
be held. This vote must be upheld by at least a 50% majority for the spill (or re-election process) to be run. At a spill meeting all directors current at the time the remuneration report was considered are required to stand for re-election. This is a complete departure from the non-bidding vote in CLERP 9. There are also regulations regarding the use of remuneration consultants, restrictions on voting by Key Management Personnel (KMP) with respect to remuneration related resolutions, and hedging of directors and senior executives’ incentive remuneration is also prohibited. These constitute the framework within which Australian executive compensation operates.

2.4.3 Australian Accounting Standards Related to Executive Remuneration

In Australia, from 1987 to 30 June 1998, legislation required listed companies to disclose the total annual emoluments, defined as cash and non-cash remuneration, paid to key management personnel (KMP) earning more than $100,000 in $10,000 bands, without the need to identify those KMP. Directors’ remuneration had to be reported in $10,000 bands. The Australian Accounting Standards Board (AASB) issued AASB 1028 ‘Accounting for Employee Entitlements’ in 1994 which took effect from the financial year ended on or after 30 June 1995. AASB 1028 was reissued as ‘Employee Benefits’ in 2001 and was applicable for reporting periods beginning after 30 June 2002. The other relevant accounting standard was AASB 1017 “Related Party Disclosure” which was applicable for financial years ending on or after 30 June 1997. From 1 July 1998, listed companies had to report the remuneration packages, including base salary as well as short term and long term incentives and other payments and allowances, of all directors and the five highest paid executives in their annual reports. From 30 June 2003, the Australian Securities and Investments Commission required companies to value options granted as part of remuneration package from the following valuation methods: Black-Scholes, Monte Carlo simulations or lattice (binomial). The increasing
globalization of business led to Australia deciding to adopt international accounting standards, which are collectively known as International Financial Reporting Standards (IFRS), by 1 January 2005 (ICAA, 2006). This decision was formally announced by the Financial Reporting Council on 3 July 2002 which resulted in a revision of Australian Accounting Standards. This led to the issuance in 2004 of AASB 1046 ‘Director and Executive Disclosures by Disclosing Entities’. AASB 1046 has since then been replaced by AASB 124 ‘Related Party Disclosure’ in 2004 which was issued in July 2004 and was applicable from annual reporting periods commencing from 1 January 2005 onwards. AASB 124 was then revised in 2005, operating concurrently with AASB 124 are AASB 2 ‘Share-based Payment’ and AASB 119 ‘Employee Benefits’.

2.5 Executive Compensation Problem and Regulations

Notwithstanding the presence of regulations and an attempt by politicians, shareholders and regulators to control executive compensation, the efforts have not yielded the desired results. Consequently, despite the various regulations, there have been concerns raised about the executive compensation practices (Guardian, 2009). These concerns heightened with the emergence of the recent global financial crisis vis-à-vis big compensation that executives are receiving. The effectiveness of regulations on executive compensation discussed needs to be investigated. This is because it is claimed that executives received high compensation in spite of poor performance during the GFC (Productivity Commission, 2009). Moreover, according to prior literature the causes of the GFC include high executive compensation (see Guay, 2010; Fels, 2010; Nesbitt, 2009). This claim confirms the claim there is mismatch or disconnection of existing executive compensation regimes and the intended objectives.
The idea of incentive-based compensation was initially developed to provide proper incentives to managers to act in the best interest of their shareholders. However, this incentive-based compensation also encourages managers to use their discretion over accounting practices to maximise their own utility. There is overwhelming evidence suggesting that managers actively take advantage of accounting discretion to opportunistically manage reported earnings (see Badertscher et al., 2010; Graham et al., 2005; Louis and Robinson, 2005). The rationale for such manipulation includes increasing the compensation of executives (Eckles and Halek, 2007; Holthausen et al., 1995; Healy, 1985). The misalignment of interests between executives and shareholders has been the focus of corporate governance literature.

The considerable amount of regulatory attention given to corporate governance issues in recent years suggests monitoring attributable to corporate governance reduces management’s capacity to manage earnings (Klein, 2002b; Peasnell et al., 2000a). Gul and Tsui (2001) also support the effectiveness of corporate governance as a monitoring system because it discourages opportunistic management behaviour. Thus, the incidence of earnings management could be determined by the strength of the corporate governance environment (see Bhat et al., 2006; Yu, 2006; Xie et al., 2003; Klein, 2002; Dechow et al., 1996). The existence of weak corporate governance therefore, may result in bad economic prospects and consequently, more expropriation by managers (Johnson, Boone and Friedman, 2000). Arguably therefore, a slack corporate governance system may lead to a severe manipulation of earnings. This study contends that the strengthening of corporate governance mechanisms will result in improved monitoring of executives’ behaviour and thereby checking earnings management induced compensation. The GFC raises the question of whether the traditional tools of corporate
governance can adequately address the potentially perverse effects of earnings management on executive compensation in Australian firms.

2.6 Conclusion

This chapter evaluates the regulatory environment of executive compensation in Australia. The regulations discussed include legislative, administrative, mandatory and voluntary rules. These various regulations on executive compensation are designed to control both the structure and high levels of compensation. However, evidence shows that restrictions on the amount or level of executive compensation either through mandatory legislative rules or voluntary administrative rules have still not achieved the desired effect. It can be argued that if the amount of executive compensation in a company is suspiciously high and there is no correlation between the executive compensation and firm performance of that particular company in a market economy, it may well indicate there are weaknesses in the regulatory regime and specifically the corporate governance of that company.

Australia operates a flexible “comply or explain” policy with respect to compensation decisions and a few mandatory requirements. Their success depends on the effectiveness of regulations to control the level and structure of executive compensation. The concerns raised by both the public and the government on high level of executive compensation can be attributed to non-adherence to the regulations or a generally weaker governance support system in Australia. The recent GFC tests whether the regulations and traditional mechanisms of corporate governance are do resolve potentially problematic outcomes of executive compensation in Australian companies. The next chapter reviews the literature on the relationship between executive compensation and managements’ behaviour,
ability to engage in earnings management to influence compensation and the role corporate governance plays in controlling this relationship.
Chapter 3

Background and Prior Literature

3.1 Introduction

This chapter critically evaluates and summarises studies that are relevant to this area of study. This chapter establishes a theoretical basis and provides information which is relevant to filling the gap in the literature. It discusses in-depth, the concept, theories and empirical studies on executive compensation, earnings management and corporate governance issues. Undoubtedly, executive compensation, earnings management and corporate governance studies continue to be a debated issue. However, most of the studies in this scope reflect the United States environment with a few elsewhere. This chapter, therefore, draws appropriate examples from other parts of the world and accordingly, applies them to the Australian context.

This chapter is organised as follows. Section 3.2 describes the concept underlying the relationship between CEO compensation and earnings management. Section 3.3 explains the existing theories behind the CEO compensation, earnings management and corporate governance. Section 3.4 evaluates empirical studies on the interrelationship between CEO compensation and earnings management and the role of corporate governance. Section 3.5 discusses the potential effects of the Global Financial Crisis on the issues in this study, executive compensation, earnings management and corporate governance. Section 3.6 identifies the research gaps that this study intends to fill. Finally, Section 3.7 concludes the chapter.
3.2 The Relationship between CEO Compensation and Earnings Management

The current study examines the link between three issues: CEO compensation, earnings management and corporate governance. Most of the literature does not combine all three issues in one study as this study seeks to do. Moreover, the extant literature is replete with various definitions, determinants and causes of the issues under review. It is appropriate to set the context of this research by briefly identifying what links these three issues. Consequently, this section specifies the foundation, scope and validity of the issues under examination. It provides an overview of the subjects involved in the study, namely, executive compensation, earnings management and corporate governance.

3.2.1 Overview of CEO Compensation

The concept of CEO compensation is normally understood in the context of a principal-agent relationship whereby the CEO experiences different interests to the owners (Jensen and Meckling, 1976). Agents may pursue some actions that are hidden from the principal, moral hazard problem (Holmstrom, 1979). The differences in the interests between shareholders and executives pose a classical agency problem, which may be solved by appropriate compensation. The executives’ compensation contracts are therefore, designed to facilitate congruence between executives’ goals and those of the owners (Jensen and Murphy, 1990). Given this conflict, composition of a sub-committee (remuneration committee) of the board is responsible for setting executive compensation. Usually a comprehensive compensation contract is formulated to include various components to achieve different objectives and hence each of these components has different determinants.
A typical compensation structure of CEO consists of a relative mix of basic salary, short-term and long-term components (Merchant and Van der Stede 2007; Chalmers et al., 2006; Deegan, 1997). Other additional components are perquisites, retirement plans (superannuation contributions), company loans, but this is not exhaustive (Sun and Rath, 2011). The determinants of CEO compensation may vary depending on the intended objectives. Determinants such as firm performance (Matolcsy and Wright, 2006; Matolcsy, 2000; Izan et al., 1998), firm characteristics, for example firm size, complexity of firm operations, growth opportunities (see Holthausen and Larcker, 1999; Rosen, 1992; Smith and Watts, 1992) and governance mechanisms (Anderson and Bizjak, 2003; Fleming and Stellios, 2002; Conyon and Peck, 1998) have all been established in the prior literature.

In order words, short-term and long-term incentives are generally tied to performance with the basic salary in turn linked to other factors such as company size (see Hayes Lemmon and Qiu, 2010; Landskroner, and Raviv, 2009; Bergstresser and Phillippon, 2006; Jin and Meulbroek, 2002). For example, base salary may be a benchmark against peer firms in the market. It can also be based on executives’ qualifications and experience. On the other hand, annual bonus may be based on accounting performance measures or may be a function of the level of growth in earnings (Ayers, 1986) while stock grant/ options as alternative forms of long-term incentive compensation may reflect market-oriented incentive pay.

The extant literature points to an executive compensation growth and level which is much beyond an increase that could be explained by changes in firm size and performance (see Harris, 2009; Gabaix and Landier, 2008; Bebchuk, 2005; Bebchuk and Grinstein, 2005). This scenario of disconnect between CEO compensation and intended
predetermined targets suggests that managers actively take advantage of accounting
discretion to opportunistically manage reported earnings so that they are paid higher
compensation. A number of studies therefore, establish a link between CEO
compensation and earnings management (see Sun and Rath, 2011; Badertscher et al.,
2010; Balachandran et al., 2008; Eckles and Halek, 2007; Louis and Robinson, 2005;
Holthausen et al., 1995; Healy, 1985).

3.2.2 Synopsis of Earnings Management

One of the challenges in the study of earnings management is that no unique definition
exists. It can even sometimes be synonymous with fraud and covered with different
meanings (Brown, 1999). The work of Beneish (2001) identifies three different
definitions of earnings management. One such definition is that earnings management is
a process of taking deliberate steps within the constraints of generally accepted
accounting principles to bring about a desired level of reported earnings. For example, a
change from FIFO to LIFO in inventory management may help a company's financial
ratios, but may not reflect the true value of its inventory.

A second definition is a purposeful intervention in the external financial reporting
process, with the intent of obtaining some private gain. Yet again, earnings management
occurs when managers use their judgment in financial reporting and in structuring
transactions to alter financial reports to either: firstly, mislead some stakeholders about
the underlying economic performance of the company; or secondly, influence
contractual outcomes that depend on reported accounting numbers. Moreover, when a
company is habitually unable to meet investor expectations or in periods of volatile
earnings, the manipulation of earnings can occur through either direct or indirect
accounting methods (Healy and Wahlen, 1999).
Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of a company or influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen, 1999). Earnings management is often considered to be materially misleading and thus a fraudulent activity (Brown, 1999). Even though the changes may follow all of the accounting standards and laws, they may go against what the standards and laws were originally trying to establish (Healy and Wahlen, 1999).

The common inclination and primary attribute that embodies all these definitions is the manipulation of the financial reporting process to create personal gain (Jackson and Pitman, 2001). In order words, managers of companies take purposive actions to change the reported accounting numbers, that is the intent to adopt actions and efforts to ‘artificially manipulate’ actual earnings and report earnings so as to achieve a desired goal (Cohen et al., 2008; Degeorge et al., 1999; Schipper 1989). However, a distinction can be made between beneficial earnings management and harmful earnings management (Parfet, 2000). Beneficial earnings management is where reported earnings are more informative in terms of the firm’s true economic performance and harmful where it serves personal interests. Harmful earnings management is deemed to be "a material and intentional misrepresentation of results" (Ronen and Yaari, 2008; Fang et al., 2008).

The motives for managers to engage in earnings management can be grouped into two types. First, capital market motives, where managers engage in earnings management to attempt to increase proceeds from stock sales, e.g., initial public offering (IPO) and
seasoned equity offerings (SEO). IPO and SEO firms generally underperform the market in the years following their offerings (see Thomas and Zhang, 2002; Dechow and Skinner, 2000; Teoh et al., 1998; Burgstahler and Dichev, 1997). The second motive relates to contract-driven where managers engage in earnings management to avoid contract violation. This includes debt contract, executive compensation contract and political costs (see Monem, 2003; Lim and Matolcsy, 1999; Sweeney, 1994; Cahan, 1992; Watts and Zimmerman, 1978).

Further evidence in these broad categories concern the following contexts: 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 (Jones and Sharma, 2001); banking industry (Anandarajan et al., 2007); and earnings restatements (Ahmed and Goodwin, 2007). However, much of the extant literature finds that earnings management is carried out with the intention of either misleading financial statement users or of biasing contractual outcomes that rely on accounting earnings (see Burgstahler and Eames, 2003; Payne and Robb, 2000).

Empirical studies document approaches or methods of earnings management. These include managing earnings through changing accounting choices (Skinner, 1993; Holthausen, 1981; Bowen et al., 1981), real transactions (Graham et al., 2005; Bushee, 1998), total accruals/discretionary accruals (Peasnell et al., 2000; Dechow, 1994), specific accruals (McNichols, 2002; Beneish, 1997), benchmark beating (Skinner and Sloan, 2002; Degeorge et al., 1999) and income smoothing (Wang and Williams, 1994).
Although much of the research has used various measures of discretionary accounting accruals to proxy for earnings management, substantial studies of prior literature make a case for the detection of earnings management through Total/discretionary accruals approach (Cohen et al., 2008; Peasnell et al., 2000; Dechow et al., 1995; Dechow and Sloan, 1991). These studies contend that accrual reflects the reporting choices made by the management team and includes multiple accounting items or transaction. It does not ignore other contemporaneous accounting choices (Klein, 2002; Xie et al., 2003).

The extant literature posits that a major reason why executives manage earnings is to improve their compensation (see Dechow and Skinner, 2000; Healy and Wahlen, 1999). Previous studies provide evidence that managers have opportunistically managed earnings in order to maximise their bonuses under the firms’ compensation plans (Badertscher et al., 2010; Eckles and Halek, 2007; Louis and Robinson, 2005; Holthausen et al., 1995). However, it has been posited that quality governance impedes earnings management (Klein 2002; Xie, Davidson and DaDalt 2003) and the influence of earnings management may be constrained by various attributes of corporate governance (Park and Shin, 2002).

### 3.2.3 Corporate Governance Practices

Corporate governance is considered to be a set of mechanisms that maintain an appropriate balance between the rights of shareholders and the needs of the board and management to direct and manage the corporation’s affairs (see Dennis and McConnell, 2002). It consists of the structures and processes for the direction and control of companies and is guided by published directives and statements of principles for corporate governance (Chalevas, 2011). Corporate governance is about the relationships among management, Board of Directors, controlling and minority shareholders and other
stakeholders. Good corporate governance contributes to sustainable economic development by improving companies’ performance and increasing their access to outside capital (ROSC, 2005). The main objective of corporate governance is therefore to mitigate agency costs between shareholders and managers. It also aims to ensure that managers are working primarily for the benefit of shareholders by trying to increase the economic value of the company (Chalevas, 2011). Corporate governance is also expected to ensure managers are motivated to maximise firm value instead of pursuing their own private objectives (Bushman and Smith, 2003). It monitors the behaviour of managers and ensures smooth and best practices in firms.

Corporate governance can broadly be classified into internal and external mechanisms (Denis and McConnell, 2003). Internal mechanisms are those related to boards of directors and sub-committees, ownership structure and executive compensation. External mechanisms relate to the corporate market control, i.e. the takeover pressure and the institution ownership (Babić, Nikolić, and Erić, 2011). The role of internal governance mechanisms is to ensure compliance with mandated reporting requirements and maintain the credibility of a firm’s financial statements (Dechow et al., 1995). The evolution of the corporate governance’s role of control and strategy has been taking place in parallel with the development of different corporate governance systems.

Corporate governance consists of various components that combine harmoniously to protect shareholders’ interests. These include board of directors, sub-committees, ownership, markets and regulatory bodies (Beasley, 1996). The importance and significance of corporate governance in the development of financial market and firm value highlights the need to give special attention to each component in corporate governance (Mitton, 2002). Corporate governance attributes are useful in signalling to
shareholders the degree of managerial manipulations (e.g. Beasley, 1996; Dechow et al., 1996). Prior corporate governance literature provides evidence on the various roles by the components to ensure good practices. These include monitoring role (Zahra and Pearce, 1989; Fama, 1980), control role (Monks and Minow, 2002), and service role in corporate strategy development, and facilitating the acquisition of important company resources.

Prior research provides evidence of the various elements of corporate governance that control and influence management’s discretion, decisions and choices (Radebaugh et al., 2006). They ensure good governances (Cohen et al., 2004). Though the list is not exhaustive, evidence can be found in the following studies: board independence (Cornett, McNutt and Tehranien, 2009; Chen, Elder and Hsiesh, 2007; Park and Shin, 2004; Jean, 2000); board size (Shen and Chieh, 2007; Xie, Davidson and Dadaltl, 2002); board meeting (Xie, Davidson and Dadalt, 2002); board composition (Xie, Davidson and Dadalt, 2002); ownership concentration (Mecca and Ballesta, 2009; Siregar and Utama, 2008); CEO duality (Xie, Davidson and Dadalt, 2002); audit committee independence (Chang and Sun, 2009; He et al., 2007); audit committee effectiveness (He et al., 2007; Xie, Davidson and Dadalt, 2002); and financial expertise (Chen, Elder and Hsiesh, 2007; Park and Shin, 2004). The effectiveness of corporate governance to protect shareholders’ interests and control managerial opportunistic behaviour depends on the strength of corporate governance system (Ebrahim, 2007, p42).

There is evidence of a strong link between aggressive accounting behaviour and executive compensation (Gao and Shrieves, 2002; Cheng and Warfield, 2005; Bergstresser and Philippon, 2006), however, a well-designed corporate governance has a role to limit the level or extent of this aggressive accounting behaviour (Klein, 2002;
Park and Shin, 2002; Dechow, Sloan and Sweeney, 1996; Beasley, 1996; Warfield, Wild and Wild, 1995). It is also argued that strong corporate governance can ensure an appropriate executive compensation contract and limit the appropriation of firms’ resources by management (Ozkan, 2007). Public interest in corporate governance increases when many high profile corporate failures occur, especially, when they are thought to be caused by systemic failures within the regulatory environment. This was especially true for the GFC which generated many concerns and discontent regarding the inability of corporate governance to moderate the harmful effects of management and protect are holders. For example, there was more pressure on boards and remuneration committees during the GFC to construct appropriate compensation packages (Wilson, 2009; Poskitt, 2010). Given the greater scrutiny during this time, it was expected that these committees improve CEO compensation packages after the GFC to better align with shareholders’ interests.

3.3 Theoretical Framework

This section identifies and discusses the theoretical bases for this study. This study simultaneously examines three issues: executive compensation, earnings management and corporate governance. Empirical studies engage theories to explain issues relating to the efficiency and effectiveness of the monitoring and control functions of corporate governance (Goldman and Slezak, 2006; Hung, 1998). Theories offer different approaches and insights to highlight issues (see Otten, 2007). Consequently, identifying a single theory to support studies involving issues of corporate governance is a challenge (Parum, 2005). However, care must be exercised as theories can be contradictory and complementary at the same time (Gomez-Mejia, 1994). It is argued that all the theories that attempt to explain executive compensation and its determinants focus on the governance process: the core being corporate governance, organisational process and
executive motivation (Bratton, 2005; Bebchuk and Fried, 2004; Conyon and Murphy, 2000). This section discusses theories about executive compensation.

### 3.3.1 Agency Theory

The major theory relating to the study of corporate governance, which predominantly emerges repeatedly in the prior literature is agency theory (See Mallin, 2007; Chen, Firth, Gao, and Rui, 2006; Rezaee, 2005; Albrecht et al., 2004; Dunn, 2004; Shleifer and Vishny, 1997; Beasley, 1996). Agency theory explains the conflict of interest between the principal and the agent (Jensen and Meckling, 1976). In a firm’s operations, the shareholders function as the principal, whereas the managers act as the agent. The differences in both positions create an imbalance with regard to divergent interests causing conflict of interest between shareholders and executives and consequently, pose a prototypical agency problem (McColgan, 2001). The conflict of interest may assume the form of information asymmetry, earning retention (Jensen, 1986), time horizon, managerial risk aversion and hence agency costs (McColgan, 2001). This needs to be controlled and monitored in order to establish better aligned interests between managers and owners (Kallas, 2005; Kiel and Nicholson, 2003).

### 3.3.2 Optimal Contracting Theory

Prior literature suggests how the principal–agent problem may decline. Optimal contracting theory is seen as a way of mitigating the principal–agent problem. Optimal contracting theory predicts that shareholders anticipate agents’ incentives to pursue objectives without reference to shareholder interests and therefore, take actions ex-ante to ensure optimal outcomes (Gugler, 2001; Murphy, 1999; Mirrlees, 1976). This theory assumes executive compensation is a tool that aligns the interests of executives and shareholders (Gomez-Mejia and Wiseman, 1997). Optimal contracting assumes
shareholders retain control over the composition of the board. The focus of the principal–agent relationship is to determine the optimal contract which serves to attract, retain, and motivate the executive (Lam and Cheng, 2006; Eisenhardt, 1989). The theory of optimal contracts implies that compensation has to be set such that executives maximise shareholder value (Murphy, 1999). Bebchuk et al. (2002) and Bebchuk and Fried (2003) differentiate this view from the perspective that executives control their own compensation. Optimal theory has a similar intention as Stewardship Theory, the latter assuming that managers are stewards whose behaviours are aligned with the objectives of their principals (Davis and Donaldson, 1997; Donaldson and Davis, 1991). Managers’ interests therefore, align with owners.

3.3.3 Managerial Ownership

Prior literature again suggests that the concept of managerial ownership may solve the agency problem. This is where an executive holds ownership in the firm he/she acts as agent and so there is no longer a complete separation of ownership and control (see Habib and Ljungqvist, 2005; Mehran, 1995; McConnell and Servaes, 1990; Morck et al., 1988). Therefore, an executive holding stock will make decisions that will maximise firm value. The extent of an executive's ownership will affect the decisions he/she makes (Core and Larcker, 2002). The greater his/her proportion of ownership in the firm, the greater will be his/her efforts to maximise decisions on its behalf (Frydman and Jenter, 2010).

3.3.4 Positive Accounting Theory

Positive accounting theory (PAT) as postulated by Watts and Zimmerman (1985) is an important theory on the issues surrounding earnings management and the study of executive compensation. PAT is considered to be an auxiliary of Agency Theory and has
similar assumptions. It equally and conveniently identifies two parties - principal and agent - who are actors of a contract and that accounting is part of the contract (Watts and Zimmerman, 1990). It is further assumed that there is a separation between the agent and the principal that is so extensive that the discretion of making the accounting choice is assigned solely to the agent. Furthermore, the agent engages in making accounting choices that maximise the wealth of the agent (Sweeney, 1994). This assumption of PAT is similar to that of prospect theory (Bebchuk and Fried, 2004). Prospect theory proposes how people make choices between different options or prospects. It is designed to better describe, explain, and predict the choices that a typical person makes, especially in a world of uncertainty. Prospect theory furthermore assumes that people value gains and losses differently and, as such, will base decisions on perceived gains rather than perceived losses. Thus, if a person were given two equal choices, one expressed in terms of possible gains and the other in possible losses, people would choose the former (see Post et al., 2008; McDermott, Fowler and Smirnov, 2008; Otten, 2007; Kahneman and Tversky, 1979; Frank, 1977).

Like agency theory, PAT has two versions: the opportunistic version and the efficient version and both make similar predictions. A manager may choose an accounting policy because it is in his/her own best interest as well as for the company (Christie and Zimmerman, 1994). Positive accounting theory is concerned with predicting such actions as the choices of accounting policies by firms and how they will to proposed new accounting standards. This theory explains the motivations behind managers’ actions of manipulating financial information. It asserts that the contract which firms enter into drive management’s concern about accounting policies. There are three underpinning hypotheses that PAT proposes. These are debt covenant hypothesis which assumes that if a firm is close to violating its accounting-based debt covenants, the firm manager is
more likely to select accounting procedures that shift reported earnings from future periods to the current period. This act will minimise problems with creditors (Sweeney, 1994).

The second hypothesis is the political cost which is to reduce the political heat. Managers are likely to choose accounting procedures that defer reported earnings from now to the future if the firm faces political problems. The third hypothesis, which is relevant to this study, is the bonus plan hypothesis. It posits that all other things being equal, managers of firms with bonus plans are more likely to choose accounting procedures that shift reported earnings from future periods to the current period to maximise compensation. For example, Healy (1985) found evidence that managers of firms with bonus plans, based on reported net income, systematically adopted accrual policies to maximise their expected bonuses. He observed that many bonus plans in executive contracts placed a ceiling on the amount of bonus. So when profit exceeded a stated maximum level, the bonus did not increase any more. Thus executives at this point engage in earnings management to keep the reported profit below the maximum because it will not result in a higher bonus. Alternatively, if profit is likely to be below the minimum, management had an incentive to use accruals to reduce it further because this would not reduce the current year’s bonus (already zero), but would increase the chance of achieving a bonus in the following year(s).

Empirical research has found evidence for the compensation factor, and slight support regarding political pressure, but only weak support for the debt covenants factor (Bowen, Noreen and Lacey, 1981; Holthausen, 1981). This study, however, acknowledges two criticisms that PAT suffers. First, PAT only explains and predicts what would happen but does not offer what should in fact exist (Deegan, 2009). Second,
it presumes that both parties in the contract (agent and principal) are rational beings who are only interested in maximising their own wealth without considering that of stakeholders (Milne, 2002). Notwithstanding these criticisms, the implication of PAT is that managers will choose accounting policies to further their own objectives (Sweeney, 1994). This study draws on the strength of the bonus plan hypothesis of PAT to posit that CEOs whose compensation is partly or wholly based on accounting numbers will manage earnings in order to boost their compensation.

3.3.5 Managerial Power Theory (MPT)

This study acknowledges a competing theory to agency theory with regard to executive compensation which is the Managerial Power Theory (MPT). MPT as summarised by Bebchuk and Fried (2004) from “The Rent Extraction View” views compensation as not only as a means for addressing the agency problem but is also part of the problem. It presumes that a manager with power over a company’s board of directors can influence the terms of his own compensation package and also make decisions that maximise his compensation (Bebchuk, Fried, and Walker, 2002). MPT suggests that some features of compensation contracts reflect managerial opportunism and influence rather than provide incentives for value maximising behaviour by managers. A powerful manager may wield influence over the board of directors and use that power to extract excess compensation. Not only will managers with more power have greater compensation, the compensation will be less related to performance than for a manager with less power (Bebchuk and Fried, 2003; Bebchuk, Fried, and Walker, 2002).

There are, however, mitigating forces that hinder managerial power and specifically extraction of excess compensation. Porter and Shackell (1997) propose “outrage” costs as a mitigating force that hinders managerial power and specifically extraction of excess
compensation. Outrage costs are the costs of embarrassment or harm in reputation to executives as a result of a proposed arrangement (Murphy, 2002; Porter and Shackell, 1997). With regard to compensation, there is evidence that such outrage by outsiders’ influences compensation contracts (Jensen and Murphy, 1990). Research in this area has found that CEOs who were criticised for their compensation experienced a decrease or just smaller increase in pay compared to other firms (Thomas and Martin, 1999; Johnson, Porter, and Shackell, 1997). Moreover, firing cost may deter managers from engaging in rent extraction. A CEO will be ousted if that person engages in rent extraction and sets his/her own pay with both observable and unobservable components, because too much rent extraction occurred (Kuhnen and Zwiebel, 2009).

Another force that mitigates Managerial_Power is strong corporate governance. The key role of board of directors is to foster firm value and prevent executives from making decisions that are not in the best interest of the firm. Several features of boards have been shown to counteract managerial power including the separation of the chief executive officer (CEO) and board chair positions (Petra and Dorata, 2008; Desai, Kroll, and Wright, 2003); a board that is independent of senior management (Linck, Netter, and Yang, 2006); a board with financial and industry expertise (Jensen, 1993), and the size of the board of directors (Petra and Dorata, 2008; Yermack, 1996; Jensen, 1993).

3.3.6 Theoretical Assumptions
The literature considers corporate governance to be an important instrument to effectively rectify the agency problem (Bebchuk and Fried, 2004; Dallas and Patel, 2004). Therefore, corporate governance is established in a firm to align the interests of the owners and managers (see Bebchuk and Fried, 2004; Jensen and Murphy, 1990; Eisenhardt, 1989; Jensen and Meckling, 1976). However, corporate governance can
assume be either weak or strong. The presence of strong and weak governance firms also determines CEO compensation (Acharya and Volpin, 2010; Dicks, 2010). They posit that firms with weak governance mechanisms induce inefficient yet high levels of pay. Bebchuk and Fried (2004) propose that weak corporate governance and acquiescent boards allow CEOs to (at least partly) determine their own pay, resulting in unreasonably high levels of compensation.

Agency theory is seen as having the most influence on the development of corporate governance issues and therefore, it is viewed as being appropriate for examining these issues (Mallin, 2007). The central issue of agency theory is how to resolve conflict between owners and managers over the control of corporate resources (Jensen, 1986, 1989). This study therefore, argues that agency theory and the positive accounting theory provide explanations for contract-driven earnings management and can explain the relationship between CEO compensation and earnings management. This study furthermore, surmises that even though managers may engage in earnings management with the view to influencing their compensation, a strong and effective corporate governance structure can mitigate the negative effect of earnings management on CEO compensation. This study draws on agency theory and the bonus plan hypothesis of positive accounting theory to test the moderating role of corporate governance concerning the relationship between CEO compensation and the incidence of earnings management, especially, during the GFC.

3.4 Empirical Studies on Relationship between Executive Compensation, Earnings Management and Corporate Governance

Over the years, there has been a rapid growth in both theoretical and empirical studies regarding the relationship between corporate governance, earnings management and
CEO compensation. This development is motivated by the impact each of these has on one another. However, prior literature mostly shows evidence of a link between two of the issues at a particular point in time. For example, these studies may examine the relationship between earnings management and executive compensation or earnings management and corporate governance or CEO compensation and corporate governance (see Badertscher et al., 2010; Merchant and Van der Stede, 2007; Bergstresser and Philippon, 2006; Bauman and Shaw, 2006; Ronen et al., 2006; Cheng and Warfield, 2005; Louis and Robinson, 2005; Murphy, 1999; Gao and Shrieves, 2002; Healy and Wahlen, 1999; Healy, 1985). This study argues that since compensation is affected by earnings management and corporate governance has potential to mitigate earnings management, studies to combine all the three issues to examine the effect is important. However, studies combining all the three issues in one study are not very common. This current study argues that the relationship between CEO compensation and earnings management can be moderated by corporate governance. This is motivated by the fact that corporate governance mitigates earnings management and can also moderate the level of CEO compensation. This section reviews some related empirical studies.

3.4.1 Empirical Studies on Executive Compensation Policies and Earnings Management

Prior literature provides overwhelming evidence supporting the view that though managers engaging earnings management (e.g. debt contract, IPO, efficiency reasons, etc.) is convincing, the major motivating reason in general is the self-interest of managers to opportunistically influence compensation (see Badertscher et al., 2010; Daniel et al., 2008; Bergstresser and Philippon, 2006; Bauman and Shaw, 2006; Ronen et al., 2006; Cheng and Warfield, 2005; Louis and Robinson, 2005; Gao and Shrieves, 2002; Healy and Wahlen, 1999; Dechow et al., 1995; Stein, 1989; Healy, 1985). With
the exception of Lam (2005) who did not find evidence for a relationship between compensation plan and earnings management, other studies provide evidence of a strong link between aggressive accounting behaviour and executive compensation (see Bergstresser and Philippon, 2006; Cheng and Warfield, 2005; Gao and Shrieves, 2002). It has been argued that firms take advantage of the latitude in the accounting standards to manage the reported earnings in varied contexts (see Cohen, Dey and Lys, 2005; Healy and Wahlen, 1999). Factors which assess financial well-being of firms, such as accounting earnings, earnings targets and financial ratios are usually used as core performance measures in the determination of CEOs compensation contract (Ashley and Yang, 2004; Sloan, 1993; Jensen and Murphy, 1990). Managers are able to manipulate the targets or the reported earnings to influence the contractual outcomes by altering the underlying economic performance which is linked to compensation (see Schrand and Walther, 2000; Perry and Williams, 1994; DeFond and Jiambalvo, 1994; Healy, 1985).

Earnings are a significant aspect of determining executive compensation if such compensations are based on performance (Sloan, 1993; Jensen and Murphy, 1990). Executives wishing to show earnings at a certain level try to find loopholes in financial reporting standards that allow them to adjust the numbers as far as practicable to achieve their desired aims (Graham et al., 2005). For example, bonus contracts have changed from primarily bonus-pool-type plans to more budget-based plans under which bonus depends on meeting a predetermined performance target (Balsam, 1998; Holthausen et al., 1995). Short-term and long-term compensation are the general ones that are spoken about when talking about earnings management because many companies use accounting information to measure performance. However, managers as rational beings, given the opportunity, undertake earnings management, where the true financial performance on which cash-based compensations paid by a company is distorted for
private gain. For example, Bergstresser and Philippon (2006) suggest that stock and option holdings create strong incentives for CEOs to manipulate earnings upward.

It is argued that the incentive to maximise bonus payments by managing earnings will persist if compensation contracts reward efforts to manage earnings. Cash-based compensation (salaries, bonus) can be said to encourage managers to engage in earnings management. Much of the executive compensation and earnings management literature has tested the bonus portion of the compensation package. This is because some cash compensation plans might contain non-linearities and that bonuses are positively related to earnings management since bonuses are often based on a performance measure that incorporates accounting earnings (Meek et al., 2007; Kadan and Yang, 2006; Huddart and Louis, 2005; Kedia, 2003; Guidry et al., 1998; Holthausen et al., 1995). Bonuses are often based on some internally or externally reported earnings threshold that, if met, will result in a greater bonus for the executive. Accounting data are used as performance measures because they are thought to be more reliable given the intense scrutiny of internal controls throughout the preparation of the financial statements (Indjejikian, 1999). In addition, incentives based on earnings performance shield the executive from market fluctuation in firm value that are beyond his control (Sloan, 1993).

Healy (1985) predicted and found evidence that managers would opportunistically manage net income so as to maximise their bonuses under their firms’ compensation plans. Healy (1985) also ascertained that bonuses were not simple linear functions of accounting earnings by using a sample of 1,527 firm-year observations covering the period 1930 to 1980. Instead, they are piecewise linear functions with lower and upper bounds defined in the funding formula for use in bonus computations. That is, managers decrease income when earnings before discretionary accruals are below the lower bound
of the bonus plan. Such a piecewise linear bonus function contradicts the conventional wisdom that managers with a bonus plan will always choose income increasing accounting choices. In Healy's sample, not all schemes have caps (upper limit), although they all have lower limit. Below the lower limit the bonus is zero. If there is no cap the bonus continues linearly upward. When there is a cap the bonus becomes a constant after that point. In fact, when earnings are far below the lower bound, managers are more likely to adopt a ‘bath taking’ strategy to further reduce current earnings in order to increase the probability of meeting future earnings’ targets and receiving a bonus the following year. Researchers refer to Healy's theory of managers using discretionary accruals to maximise short-term bonus compensation as the bonus-maximisation hypothesis.

Prior studies which investigate the effect of discretionary accruals on actual compensation paid include Balsam (1998). Balsam (1998) examines this relationship by studying the impact of discretionary accruals on CEO cash compensation, defined as salary plus bonus. Using a sample of 3,439 firm observations from 1980-1993, Balsam (1998) finds that cash flows, discretionary accruals, and non-discretionary accruals are all significant determinants of CEO cash compensation. He also finds a significant positive relationship between discretionary accruals and cash compensation. Furthermore, managers use income-increasing discretionary accruals to increase compensation. The significant positive coefficient on this variable reveals that positive discretionary accruals are given more emphasis in compensation decisions than negative discretionary accruals. Balsam (1998) also discovered that the relationship between compensation and earnings management differs depending on both the sign and level of accruals as well as firm incentives to increase income related to certain earnings targets.
His evidence is consistent with firms’ rewarding efforts to manage earnings using income increasing discretionary accruals.

Holthausen et al. (1995) also extended Healy’s work. However, there are differences between the two studies. First, Healy (1985) made inferences about CEO incentives based on funding formulas while Holthausen et al. (1995) used a budget-based compensation scheme. Unlike funding formulas, a budget-based compensation scheme clearly defines minimum, target, and maximum bonus payments at the beginning of the year and thus allows authors to directly determine whether CEOs are below the lower bound, above the upper bound, or in between the lower and upper bound. This budget-based compensation scheme hence provides a direct linkage between the financial performance of the firm and the annual bonus earned by an executive. Second, Healy (1985) makes predictions about earnings management based on ex ante earnings before discretionary accruals. In contrast, Holthausen et al. (1995) replaced earnings before discretionary accruals with an ex post actual bonus. They predicted that managers have an incentive to select income-decreasing discretionary accruals if the actual bonus is below (above) the lower (upper) bound; while managers have an incentive to select income-increasing accruals if the actual bonus is between the lower and upper bounds. Their approach is ex post and called the fixed-target hypothesis.

Holthausen et al. (1995) used confidential compensation data with 443 firm-year observations that covered two periods, 1982 to 1984 and 1987 to 1991. They estimated discretionary accruals from the Modified Jones Model. The results from t-tests and chi-square tests show a downward earnings manipulation at the upper bound relative to those between the lower and upper bound. Holthausen et al. (1995) found that managers who were at their bonus maxima managed accruals so as to lower earnings, consistent
with Healy's results. They did not find, however, that managers who received a zero bonus also used accruals to manage earnings downward. However, results do not support the view that managers manipulate earnings downwards when compensations are below the lower bound of their contract. Holthausen et al. (1995) show that income-increasing is much more prevalent than income-decreasing, as many plans do not include an upper bound.

Like Holthausen et al. (1995), Gaver, Gaver, and Austin (1995) also extend Healy (1985) by examining the relationship between discretionary accruals and bonus plan bounds. They found similar results supporting the existence of income-increasing and income-decreasing incentives for bonus purposes. However, the principal difference between the two studies is that Healy (1985) used total accruals while Gaver et al. (1995) used the Modified Jones Model to estimate discretionary accruals. Using updated data with 837 firm-years covering the period from 1980 to 1990, Gaver et al. (1995) find that when earnings before discretionary accruals fall below the lower bound, managers do exercise positive discretionary accruals. However, unlike Healy (1985), they find that when earnings before discretionary accruals fall below the lower bound, managers select income-increasing discretionary accruals and vice-versa. They believe their results are more consistent with the income-smoothing hypothesis than with Healy's bonus hypothesis. The findings of these papers suggest that executives have an incentive to manage earnings to maximise bonus payments.

McNichols and Wilson (1988) also examine the behaviour of accruals in a bonus context over the period 1969–1985. They limited their investigation to the provision for bad debts, on the grounds that a precise estimate of what the bad debts allowance should be (i.e. non-discretionary accrual) can be made. They find that discretionary bad debt
accruals are significantly positive (i.e. income reducing) for firm years that are both very profitable (i.e. above the caps) and very unprofitable (i.e. below the lower limit). For firm years between these extremes, discretionary accruals are much lower and usually negative. Guidry, Leone, and Rock (1999) test the bonus-maximisation hypothesis that managers make discretionary accrual decisions to maximise their short-term bonuses. They find evidence consistent with Healy (1985). The literature largely suggests that executives do manage earnings to increase their own cash bonus compensation.

Shuto (2007) investigates the relationship between discretionary accounting choices and Japanese executive compensation. In Japan, executive compensation is not publicly available and only the total amount of compensation paid to all directors is disclosed. He uses the total cash compensation data (the sum of salary and bonus) of the board of directors as a proxy for executive compensation and discretionary accruals were estimated from the Cash Flow Modified Jones model (Kaszni, 1999). Using a large sample of 16,368 firm-year observations for the period 1991 to 2000, Shuto (2007) first analyses the relationship between earnings components and executive compensation. The results show that discretionary accruals increase executive compensation.

Furthermore, Shuto (2007) observes that non-discretionary earnings components are more value-relevant than discretionary components and shareholders are in favour of these more value-relevant earnings components in evaluating executive compensation. Shuto (2007) interprets this finding as evidence that managers engage in ‘big bath’ earnings management when there is no bonus rewarded. The analyses also show that firm managers receiving no bonus adopt income-decreasing accruals and extraordinary items. Finally, both Balsam (1998) and Shuto (2007) argue that the association between discretionary accruals and executive compensation varies depending on the company’s
circumstances: firstly, whether firm managers use unusually high (low) discretionary accruals to increase (decrease) income; and secondly, whether firm managers use discretionary accruals to smooth income.

Gao and Shrieves (2002) examined how the components of compensation influence earnings management behaviour. Their hypotheses are based, in part, on the observation that discretion over accounting accruals gives managers a potentially valuable timing option that will lead to strategies to maximise their compensation. Gao and Shrieves (2002) in their empirical analysis show that earnings management intensity is related to managerial compensation contract design. The study finds the amounts of stock options and bonuses are positively related to earnings management intensity, whereas salaries are negatively related. Like Healy (1985), Gao and Shrieves (2002) show that magnitudes of the effects of some compensation variables on earnings management intensity are conditional on the proximity of pre-managed earnings to specified targets. They provide strong evidence that compensation contract design influences earnings management, and that the influences of the various compensation components appear to be largely predictable on a presumption that managers behave opportunistically.

Guidry et al. (1999) test the bonus maximisation hypothesis at the business unit level for a multinational conglomerate. They used 117 different American business units and 179 business-unit-years observations over a period of 1994-1995. Guidry et al. (1999) document that business-unit managers manipulate earnings in order to maximise their short-term bonus plans. Given that incentives of individual managers may differ from one business unit to the other, income-increasing discretionary accruals in one business unit can offset income-decreasing discretionary accruals in another business unit. The investigation of business-unit level increases the probability for earnings management
behaviour to be detected. Thus, this examination of earnings management at business-unit level was innovative.

Degeorge et al. (1999) also develop an optimising model on how earnings are managed to reach thresholds based on executive incentives. The presumption of the model is that earnings management arises from management wealth maximisation incentive. In order to maximise their wealth, managers tend to manage earnings upwards when earnings falling just short of thresholds. When earnings are far from thresholds (whether below or above), managers tend to manage earnings downwards to make thresholds more attainable in the future. The studies discussed above suggest evidence of earnings management for compensation maximisation purpose which is often classified as contract-driven earnings management. Despite much empirical work being done on this topic, studies examining earnings behaviour and executive compensation are not only limited but also inconclusive (Sun and Rath, 2011).

3.4.2 Empirical Studies of Executive Compensation and Corporate Governance

The current financial climate, the financial collapses of well-known firms and the criticisms of inappropriate executives’ rewards designs have heightened interest in executive compensation and corporate governance studies (Frydman and Jenter, 2010). Executive compensation theory views the compensation as a means to relieve the principal-agent conflict where the board designs the best contract possible (Bebchuk and Fried, 2006, 2003; Jensen and Murphy, 1990). However, some studies argue that managerial power influences the compensation setting process leading to excessive compensation (Bebchuk et al., 2002). This is motivated only by the presence of a weak corporate governance system (Conyon and He, 2004; Bebchuk et al., 2002; Core et al., 1999).
Thus, high executive compensation does not necessarily solve the agency problem except where scrutiny or control mechanisms known as corporate governance mechanisms are required and implemented (Kim and Nofsinger, 2007; Jensen and Meckling, 1976). This study argues that if executive compensation is appropriately practiced without any excess or fraudulent actions, executive compensation is able to compel executives to enhance shareholder wealth (see Sapp, 2008; Jensen, Murphy and Wruck, 2004; Bushman and Smith, 2003). This study further argues that the dysfunction of corporate governance mechanisms impoverishes managerial monitoring which leads to the entrenchment of moral hazard.

Several studies have examined the influence of corporate governance variables on executive compensation (see Bebchuk et al., 2006, 2004, 2003; Bebchuk and Fried, 2003; Core et al., 1999). The extant literature recognises that a well-designed corporate governance system is able to constrain executive compensation (see Cheng and Firth, 2006; Cyert et al., 2002; Klein, 2002; Brunello et al., 2001; Izan et al., 1998; Dechow, Sloan and Sweeney, 1996; Beasley, 1996; Warfield, Wild and Wild, 1995). Executive pay cannot be fully understood if the implications of socially constructed corporate governance arrangements are ignored (Otten, 2007) because it is a central issue in the debate on corporate governance.

Empirical evidence provides support for the ability of corporate governance and its components to control executive compensation. Core et al. (1999) used sample comprising 405 big companies in the US during the period from 1982 to 1984. They find that firms with weak governance structures have a high level of compensation. They conclude that firms with weak corporate governance are likely to have a high agency
problem. Using US data, Fahlenbrach (2009) finds that interactions of the corporate governance mechanisms with total pay-for-performance and excess compensation can be explained by governance substitution. He argues that their results are inconsistent with recent claims that entrenched managers design their own compensation contracts. Ozkan (2007) investigates whether corporate governance mechanisms have an impact on the level of CEO compensation for a sample of UK companies from 1997 to 2004. In particular, the study examines the role of a comprehensive set of corporate governance variables in determining the structure of CEO compensation and pay-performance sensitivity.

Prior studies do not examine only the corporate governance as a composite body but evidence suggests that elements of corporate governance mechanisms, such as board independence, audit committee characteristics; remuneration committees’ characteristics can mitigate excessive compensation. Zhu et al. (2009) find that the corporate governance mechanisms such as independent directors and the compensation committee do impact on the CEO incentive system in China. In Indonesia, Komari and Faisal (2007) detect a significant influence of managerial and institutional ownerships on executive compensation. Chhaochharia and Grinstein (2006) examine the effect of board oversight on executive compensation and found board oversight to be a significant determinant of the size and structure of executive compensation. Chalevas (2011) investigated the effect of corporate governance principles on executive compensation and firm performance prior to and after the adoption of the first Greek Law on corporate governance. Chalevas (2011) found that the election of independent non-executive board members controls executive compensation. Furthermore, Ozkan (2007), using a sample of 414 UK firms in 2005, found a positive and significant relationship between board size and the proportion of non-executive directors and all CEO compensation.
components. Additionally, the role of the board structure of companies is also examined.

Contrary to the studies discussed above on corporate governance, Capezio’s (2008) results do not support the propositions that board independence is negatively associated with CEO total cash remuneration, or annual cash remuneration. Neither do the results support the view that the presence of a non-executive dominated remuneration or nomination committee is negatively associated with CEO total or annual incentive, cash remuneration. Capezio (2008) interprets these results to mean that non-executive dominated boards, committees and chairs are not necessarily more effective in managing the relationship between CEO cash remuneration and performance than boards that do not subscribe to such principles of independence and best practice corporate governance. Thus, Capezio (2008) argues that independent boards are not necessarily less prone to making unreliable decisions on CEO performance appraisal and remuneration. Nevertheless, the majority of studies on compensation and corporate governance agree to the effect that corporate governance aligns agents’ interests with principals’ and consequently, mitigates excessive compensation and reduces moral hazards.

3.4.3 Empirical Studies on Earnings Management and Corporate Governance

Another dimension of this study is the link between corporate governance and earnings management. Prior studies on the association between earnings management and corporate governance are varied in terms of setting, the choice of corporate governance variables and approach. While some studies have examined combined effect of corporate governance and its relationship with earnings management, others have examined the link using various elements of corporate governance and earnings management and support the effectiveness of corporate governance as a monitoring system (Gul and Tsui,
2001). Given that earnings management is negatively associated with corporate governance and that corporate governance is positively associated with the integrity of the financial reporting process, it is then justifiable to employ corporate governance to indicate the reliability of accounting earnings.

The influence on earnings management by various attributes of corporate governance has been examined by several researchers. For example, Reitenga and Tearney (2003) examine the impact of independent directors and CEO stockholdings on earnings management, Peasnell, Pope, and Young (2005), investigate the impact of outside directors and audit committee on abnormal accruals, while Ahmed and Duellman (2007) examined the association between board of director characteristics and earnings conservatism. Xie et al. (2003) conclude that companies with stronger boards, more independent boards and audit committees tend to have less earnings management (see also Klein, 2002; Ebrahim, 2007). In particular, companies with audit committees consisting solely of independent directors, financial expertise, and a clear mandate are less likely to aggressively manage earnings (Bédard et al., 2004).

Many prior studies have agreed that a well-designed corporate governance system can limit the level or extent of earnings management (Warfield, Wild and Wild, 1995; Dechow et al., 1996; Beasley, 1996; Klein, 2002). Good corporate governance reduces emerging market liability to financial crises, reduces transaction costs and the cost of capital, and leads to capital market development. Weak corporate governance frameworks reduce investor confidence, and can discourage outside investment (Nowroozi, 2005). An effective internal corporate governance mechanism is negatively associated with firms’ earnings management (Davidson, Kent, and Stewart, 2005; Klein, 2002; Peasnell, Pope, and Young, 2005; Xie, Davidson III, and DaDalt, 2003). For
example, Xie et al. (2003) contend that the number of board meetings and board size have a negative association with earnings management. They argue that the larger board may contain more experienced directors and this may deter firms’ earnings management behaviour. They also argue that the number of board meetings represents the activity of a board and hence a more active board is can constrain the firm’s earnings management.

Niu (2006) using firm-level corporate governance data for a sample of Canadian firms for the period 2001-2004, explores the association between corporate governance mechanisms and the quality of accounting earnings. Niu (2006) findings demonstrate that overall governance quality is negatively related to the level of abnormal accruals and positively influences the return-earnings association. In addition, the magnitude of abnormal accruals is negatively associated with the level of independence of board composition, the extent of alignment of management compensation with interests of shareholders and the strength of shareholder rights. The results from the returns and earnings analysis are consistent with these findings.

Klein (2002) examines the impact of changes in board independence on abnormal accruals in the US context. Her findings suggest that board independence has a significant negative effect on firms’ earnings management. Peasnell et al. (2005) provide evidence in the UK that the presence of independent non-executive directors on the board is negatively associated with firms’ income increasing accruals. Independent directors provide effective supervision on mitigating opportunistic behaviour by managers. Davidson et al. (2005) made similar conclusions about Australia. Klein (2002b) and Peasnell et al. (2000a) show that monitoring attributable to corporate governance reduces management’s capacity to manage earnings.
Iyengar, Land and Zampelli (2010) examine whether reinforcing corporate governance mechanisms would result in the improved relevance and reliability of financial statements. Using pooled ordinary least squares regression, their study examined the quality of reported earnings for a sample of firms from 1998 to 2002. Their findings show negative and statistically significant associations between reported earnings quality and the proportion of CEO incentive pay and firm's growth opportunities. Yet, board independence does not seem to be associated with earnings quality. The results provide support for the argument that there should be a closer scrutiny of executive pay by regulatory bodies. Additionally, unlike prior studies the findings suggest that the emphasis on board independence as an effective monitoring device may be misplaced. The study, however, adds to past studies of the relationship between corporate governance and earnings quality and the role of executive compensation.

The extant literature shows that the relationship between corporate governance mechanism and governance attributes that influence earnings management include but are not limited to board of directors who can play an important role in dealing with the agency problem (Mecca and Ballesta, 2009; Chen, Elder and Hsiesh, 2007). Board independence or board composition is another corporate governance attribute that mitigates earnings management (Cornett, McNutt and Tehranien, 2009; He et al., 2007; Park and Shin, 2004; Xie, Davidson and Dadalt, 2002; Jean, 2000). Apart from the presence of independent directors, other board characteristics such as size, number of meetings, CEO duality, and the presence of an audit committee are considered to have an impact on firms’ earnings management.

Board size (Shen and Chieh, 2007; Xie, Davidson and Dadalt, 2002; Chtourou et al., 2001; Alonso et al., 2000; Dechow et al., 1996; Jean, 2000), board meeting (Xie,
Davidson and Dadalt, 2002; Mashayeki and Noravesh, 2008), ownership concentration (Mecca and Ballesta, 2009; Siregar and Utama, 2008), CEO duality (Xie, Davidson and Dadalt, 2002), audit committee independence (Xie et al., 2003; Klein, 2002b; Chtourou et al., 2001; Peasnell et al., 2000; Chang and Sun, 2009; He et al., 2007), audit committee effectiveness or competence (He et al., 2007; Bryan et al., 2004; Xie et al., 2003; Chtourou et al., 2001; DeZoort and Salterio, 2001; Xie, Davidson and Dadalt, 2002) and financial expertise (Chang and Sun, 2009; Chen, Elder and Hsiesh, 2007; Park and Shin, 2004) emerge as important themes in the literature. The evidence that earnings management is influenced by these corporate governance attributes is, therefore, well established. Given that earnings management is negatively associated with corporate governance and that corporate governance is positively associated with the integrity of the financial reporting process, it corporate governance can therefore be used to indicate the reliability of accounting earnings.

3.5 The Potential Effects of Financial Crisis on the Relationship between CEO Compensation and Earnings Management

Prior literature has established a strong association between CEO compensation and earnings management. However, examining the relationship in the context of elements that can cause the relationship to alter has not been fully explored. This study argues that the relationship between CEO compensation and earnings management may alter, depending on the nature and form of factors that influence each one. Apart from corporate governance mechanisms which can have a great impact on earnings management and CEO compensation (as discussed above), a financial crisis can also affect earnings management and CEO compensation. Financial crisis can take the form of a firm, be country-specific (distressed firms in New Zealand) or regional (1990 Persian Gulf Crisis and 1997 Asian Financial Crisis) or even global (2007/08 Global
Financial Crisis) in nature (see Habib et al., 2013; Erkens et al., 2012; Orlizky and Swanson, 2010; Frydman and Jenter, 2010; Sharfman, 2009; Johl, Jub and Houghton, 2003; Jaggi and Lee, 2002).

Studies on the impact of financial crisis on earnings management and CEO compensation are rare. The limited studies on how earnings are managed during such an event have proffered different results. It is argued that managers are more likely to engage in earnings manipulations during an economic boom and not a recession (Strobl, 2013). In periods of economic boom, managers are more over confident, they tend to engage more in manipulative accounting practices (Schrand and Zechman, 2012) and employ more optimistic forecasts (Hribar and Yang, 2011). On the other hand, the difficulty in meeting targets during a financial crisis compels management to manage earnings (Burgstahler and Dichev, 1997; Graham et al., 2005; Charitou et al., 2007). For example, evidence exists during the Asian Financial Crisis company executives engaged in earnings management through discretionary accruals choices (Kim and Yi, 2006). The motivation could be to conceal the true earnings performance (Choi, Kim and Lee, 2011), creating an image of financial expertise in order to improve the borrowing terms of a debt renegotiation. They also do this to access equity capital from the market more easily and at a lower cost; the market tolerates poor performance during a recession in times of crisis and so may depress earnings further for the benefit of managers, through accruals by ‘big bath’ method (see Iatridis and Kadorinis, 2009; Ahmed et al., 2008; Chia et al., 2007; Saleh and Ahmed, 2005; Healey and Wahlen, 1999; Dechow et al., 1995).

The GFC with its associated credit crunch and the follow-on economic recession could not prevent many companies from paying big bonuses and compensations to their
executives. There is documented evidence that high risk-taking behaviour by executives did contribute to the economic crisis (Fels, 2010; Nesbitt, 2009). Consequently, the challenge posed by financial crisis therefore, may create strong incentives for managers to engage in opportunistic earnings management (discretionary accruals choices) (Chia et al., 2007; Ebrahim, 2007; Peasnell et al., 2006). For instance, Rosner (2003) documented that companies engage in income-increasing earnings manipulation if they are in danger of becoming bankrupt. The author further argues that companies engage in earnings management practices *ex ante*, when they are in financial distress.

It is outside the scope of this study to examine why and how the GFC affected earnings management and CEO compensation. However, this study argues that the GFC presents an enormous challenge to capital markets and indeed executives to perform well in order to maintain confidence in the market or sustain their companies in a dreary period (Shen and Chih, 2007; Rahman and Ali, 2006). The use of earnings management serves as an instrument to influence earnings figures or to soften the impacts of the crisis.

It can be inferred from the discussion above that the GFC potentially affected earnings management and CEO compensation. The evidence that executive compensation is a contributing factor to the GFC (Fels, 2010; Nesbitt, 2009) and also it provided management with the opportunity to engage in earnings management suggest that the relationship between CEO compensation and earnings management is likely to change since the effect on one variable is likely to alter the relationship. Table 3.1 below summarises the major studies on the link between CEO compensation, earnings management and corporate governance structures, and the few studies that have been done on the effect of financial crisis.
Table 3.1
Summary of key studies investigating the relationship between CEO compensation and earnings management

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample/Setting</th>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Analysis Techniques</th>
<th>Findings</th>
</tr>
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<tbody>
<tr>
<td>Watts &amp; Zimmerman (1978)</td>
<td>52 U.S. firms response to General Price Level Adjustments (GPLA) in 1974</td>
<td>Dichotomous variable for corporate lobbying on accounting standards (firm favoured versus firm opposed GPLA)</td>
<td>Dummy variable for the existence of bonus plans (1 if firm had a management incentive scheme and 0 otherwise)</td>
<td>Mann-Whitney U test Discriminate analysis</td>
<td>Managers of unregulated small size firms with lower political costs will increase earnings. Managers of regulated or large firm will decrease earnings which result in lower tax, regulatory and political costs</td>
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<tr>
<td>Holthausen 1981)</td>
<td>96 firms switched depreciation from an accelerated method to a straight-line method (1955–1978)</td>
<td>Abnormal stock returns around depreciation switch announcement</td>
<td>Dummy variable for the existence of bonus plans</td>
<td>Multiple regression analysis</td>
<td>No evidence supports management compensation contracts are important determinants of the decision to change depreciation techniques</td>
</tr>
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<td>Healy (1985)</td>
<td>94 Fortune U.S. industrial firms (1930–1980)</td>
<td>Total accruals (estimated as the difference between reported earnings and operating cash flows) Voluntary changes in accounting procedures on earnings.</td>
<td>Bonus plan parameters group with lower, middle, and upper bounds</td>
<td>Contingency table Chi-square test T-test compare the mean differences</td>
<td>Managers are more likely to choose income-decreasing accruals when their bonus plan upper and lower bounds are binding, and income-increasing accruals when these bounds are not binding. Changes in accounting procedures are associated with adoption or modification of bonus plan</td>
</tr>
<tr>
<td>Skinner (1993)</td>
<td>A estimation sample of 504 firms in 1987 with a sub-sample of the 100 largest firm</td>
<td>Categorical scale: 0 for income-decreasing strategy; 1 for neither income-increasing nor decreasing ; 2 for income-increasing strategy</td>
<td>Dummy variable for the existence of bonus plans</td>
<td>T-test Wilcoxon tests Logit regression</td>
<td>Firms with bonus plans are more likely to select income-increasing depreciation and goodwill procedures after controlling for investment opportunity</td>
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<tr>
<td>Study</td>
<td>Observations/Periods</td>
<td>Methodology</td>
<td>Findings/Conclusion</td>
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<tr>
<td>Holthausen et al. (1995)</td>
<td>443 firm-year observations (1982 to 1984, and 1987 to 1991)</td>
<td>Discretionary accruals: Healy’s total accruals Modified Jones model</td>
<td>T-test Chi-square test Find that managers manipulate earnings downwards when their bonuses are at the maximum</td>
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<tr>
<td>Balsam (1998)</td>
<td>3,439 firm-years observations from COMPUSTAT (1980–1993)</td>
<td>Cash salary and bonuses paid to CEO</td>
<td>Regression analysis Find positive association between discretionary accruals and CEO cash compensation, such association depends on the circumstance of the firm</td>
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<tr>
<td>Guidry et al. (1999)</td>
<td>117 U.S. business units with 179 business-unit-years observations (1994–1995)</td>
<td>Total accruals Discretionary accruals from Modified Jones model Inventory reserve</td>
<td>Two-sample t-tests Two-sample Wilcoxon tests Find that managers make discretionary accrual decisions to maximize their short-term bonuses at the business unit level for a multinational conglomerate</td>
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<tr>
<td>Matsunaga &amp; Park (2001)</td>
<td>3,651 firm-year observations (1993–1997)</td>
<td>Change in CEO’s bonus deflated by prior year salary</td>
<td>Pooled regression Wald tests The board reduces CEO pay when the firm’s quarterly earnings fall short of the consensus analyst forecast or the earnings for the same quarter of the prior year</td>
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<tr>
<td>Ke (2001)</td>
<td>1,311 publicly traded firms with 18,623 quarterly data from EXECOOMP database (1992–1998)</td>
<td>Change in quarterly EPS</td>
<td>Probit model Cox hazards model The probability of reporting small increase in earnings is higher and The duration of consecutive earnings increases is longer for CEOs with high equity-based compensation</td>
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<tr>
<td>Gao &amp; Shrieves (2002)</td>
<td>7,301 firm-year observations from ExecuComp database (1992–2000)</td>
<td>Absolute value of the scaled discretionary current accruals Dollar value of salary, bonus, option, restricted stock, long-term incentive plans, incentive intensity of stock option awards and restricted stock award</td>
<td>Multiple regression Discretionary accruals are positively related to bonuses and options while negatively related to salary. The relationship is conditional on proximity of pre-managed earnings to an earnings benchmark</td>
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<tr>
<td>Baker et al. (2003)</td>
<td>168 firms with 1100 firm-year observations collected from Wall Street Journal survey</td>
<td>Signed discretionary accruals from Modified Jones Model The ratio of option award to the sum of salary, bonus, and option exercises. The 2SLS using fitted value of option ratio</td>
<td>Firms that compensate their executive with greater shares of options manage</td>
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<tr>
<td>Source</td>
<td>Sample Size</td>
<td>Methodology</td>
<td>Findings</td>
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<tr>
<td>Cheng &amp; Warfield (2005)</td>
<td>9472 firm-years observation ExecuComp database (1993–2000)</td>
<td>CEOs’ net sales of share in year t+1. The probability of earnings surprise per share be either negative, zero or one cent</td>
<td>fitted value of option ratio</td>
<td>CEOs with high equity incentives are more likely to meet or beat analysts’ forecasts; CEOs with high equity incentives increasing their stock sales after earnings management</td>
<td></td>
</tr>
<tr>
<td>Bergstresser &amp; Philippon (2006)</td>
<td>Entire Compustat for Accounting Data (1976–2000); 4199 ExecuComp data (1993–2000); 15654 Thomson Financial Insiders trading data (1996–2001)</td>
<td>Absolute and signed total Accruals Modified Jones model</td>
<td>CEO equity incentive measured as the ratio of a CEO’s total compensation that would come from a one percentage point increase in the equity value of the firm</td>
<td>CEOs with overall compensation that is more closely tied to the value of stock and option holdings are associated with higher levels of earnings management. CEOs exercise unusually large numbers of options and sell large numbers of shares during the high accruals periods</td>
<td></td>
</tr>
<tr>
<td>McAnally et al. (2006)</td>
<td>1,744 firms with 9,954 firm-years observations (1992–2004)</td>
<td>Dummy variable equals to 1 if a firm miss earnings benchmark and zero otherwise</td>
<td>Option grants, exercises and holding book-tax difference proxy for earnings management</td>
<td>Regression</td>
<td>CEOs with overall compensation that is more closely tied to the value of stock and option holdings are associated with higher levels of earnings management. CEOs exercise unusually large numbers of options and sell large numbers of shares during the high accruals periods</td>
</tr>
<tr>
<td>Balachandran et al. (2008)</td>
<td>138 on-market buyback firms (1996–2003)</td>
<td>Discretionary current accruals measured from a variation of the cross-sectional modified Jones model (Teoh et al., 1998a)</td>
<td>On-market share buybacks, exercisable share options</td>
<td>Cross-sectional regression</td>
<td>Managers with option holdings rely on reported earnings to influence share price. They use two mechanisms: discretionary current accruals and on-market buyback announcements to drive up share prices</td>
</tr>
</tbody>
</table>
### Panel B
Summary of key studies investigating the relation between CEO compensation and corporate governance

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample/Setting</th>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Analysis Techniques</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core et al. (1999)</td>
<td>A sample of 205 US firms between 1982 and 1984.</td>
<td>CEO Salary, CEO Total cash, CEO Total compensation</td>
<td>CEO-chairman duality, Board size, Inside directors, Outside directors, appointed by CEO, Gray outside directors, Interlocked outside directors, Outside directors over age 69, Busy outside directors</td>
<td>OLS Regression</td>
<td>A positive and significant relationship between the level of CEO compensation and CEO-chairman duality, board size, outside directors appointed by the CEO, gray outside directors, interlocked outside directors, outside directors over age 69, and busy outside directors. A negative and significant relationship between CEO compensation and CEO equity ownership, the presence of another executive on the board who owns at least 5% of the outstanding equity, the existence of an external party or block-holder that owns at least 5% of the outstanding shares, and inside directors on the board.</td>
</tr>
<tr>
<td>Ozkan (2007)</td>
<td>A sample of 414 UK firms in 2005</td>
<td>Salary, Bonus, LTIPs, ESOs</td>
<td>Board size, Outside directors, CEO ownership, Largest 4 institutional ownership, Total institutional ownership, Block-holder ownership, Directors’ ownership</td>
<td>OLS Regression</td>
<td>A positive and significant relationship between board size and the proportion of non-executive directors, and all CEO compensation components. A negative and significant relationship between % largest four institutional ownership and total institutional ownership, and CEO cash and total compensation. The relation was non-significant with equity-based compensation. A negative and significant relationship between block-holder ownership and directors’ ownership, and all CEO compensation components. CEO ownership was non-significant related to all CEO compensation variables.</td>
</tr>
<tr>
<td>Boyd (1994)</td>
<td>A sample of 193 US firms for the year 1980</td>
<td>Total cash compensation (salary plus bonus)</td>
<td>CEO-chairman duality, The proportion of insider directors, Board stock ownership, Institutional ownership, Director compensation</td>
<td>OLS Regression</td>
<td>The insider ratio loaded positively on the board control dimension (was negatively associated with compensation) CEO duality and total director compensation loaded negatively on board control. Board stock ownership and board representation by ownership groups loaded positively on board control.</td>
</tr>
<tr>
<td>Finkelstein and Hambrick (1989)</td>
<td>A sample of 110 US firms listed under Leisure</td>
<td>Salary, Bonus, Total cash compensation</td>
<td>Firm size, Firm performance, Firm complexity, CEO tenure, CEO ownership, CEO’s family</td>
<td>OLS Regression</td>
<td>Salary is found to be positively and significantly related to firm size, and non-significantly related to firm performance, complexity, CEO general management experience, and</td>
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<tr>
<td>Study</td>
<td>Sample Size</td>
<td>Variables</td>
<td>Method</td>
<td>Findings</td>
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<tr>
<td>Industry in the years 1971, 1976, 1982, and 1983</td>
<td>Ownership, Board vigilance, Human capital</td>
<td>CEO tenure, and the percentage shareholders of outside directors Firm performance and CEO general management experience are found to strongly increase bonus. However, it is found to be non-significantly affected by firm size, complexity, CEO tenure, CEO ownership, and the percentage shareholders of outside directors. Total compensation is found to be positive and significantly correlated with firm size and firm profitability. Surprisingly, the CEO’s family ownership has a negative and significant impact on total compensation. Other variables were non-significantly associated to this component</td>
<td>OLS Regression</td>
<td>A positive and significant relationship between the percentage of external board members appointed by the CEO and total compensation. A negative and significant association between CEO ownership and block-holder ownership and total compensation. Total compensation is not significantly related to external board members’ and a non-CEO internal board members’ ownership.</td>
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<tr>
<td>Lambert et al. (1993)</td>
<td>A sample of 303 US firms for the period 1982,1983, and 1984</td>
<td>Salary, Bonus, Total cash compensation Long-term, compensation, Total compensation</td>
<td>OLS</td>
<td>CEO ownership, Non-executive directors ownership. The existence of insiders in the board who owns at least 5%. The existence of an external party or block-holder that owns at least 5 %. The proportion of non-executive directors in the board. The percentage of external board members who were appointed after the present CEO</td>
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<tr>
<td>Byrd and Cooperman (2010)</td>
<td>A sample of 93 financial US firms for the 2001</td>
<td>The average total compensation paid to the firm’s CEO over 1998-2000 relative to the firm’s market capitalization</td>
<td>OLS Regression</td>
<td>No significant association between CEO compensation and board tenure. However, interestingly, when they only include subsample firms with CEOs with tenure of six years or greater, they conclude a significant and positive correlation with CEO compensation.</td>
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<tr>
<td>Brick et al. (2006)</td>
<td>CEO cash, compensation, CEO total compensation</td>
<td>Board and remuneration committee members’ tenure</td>
<td>Fixed effect regression</td>
<td>There is a highly significant positive relationship between CEO and director compensation</td>
<td></td>
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<tr>
<td>Conyon (1997)</td>
<td>A sample of 213 UK firms for the years 1988-1993</td>
<td>Cash compensation of the highest paid director (salary plus</td>
<td>Fixed effect Regression</td>
<td>Firms adopting remuneration committees were found to have lower growth rates in executive, pay. CEO duality was found to play no role in determining executive</td>
<td></td>
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<tr>
<td>Study</td>
<td>Sample Description</td>
<td>Variables Studied</td>
<td>Methodology</td>
<td>Findings</td>
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<tr>
<td>Conyon and Peck (1998)</td>
<td>A sample of 100 UK companies in the period 1991-1994</td>
<td>Salary, Bonus, Other miscellaneous earnings of a company's highest-paid director</td>
<td>The proportion of nonexecutive directors, The existence of a remuneration committee, The proportion of nonexecutives on the remuneration committee, CEO-chairman duality</td>
<td>OLS Regression &amp; Fixed-Effect Regression: Neither the proportion of outside directors on the board nor CEO duality was related to executive compensation. Firms adopt remuneration committees or with a high proportion of outsiders on those committees generally pay higher levels of executive compensation.</td>
<td></td>
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<tr>
<td>Fahlenbrach (2009)</td>
<td>A sample of 11,029 US CEO years for 1993-2004</td>
<td>Excess compensation measured by the natural logarithm of total compensation, industry-adjusted compensation, and size-adjusted compensation (Black-Scholes)</td>
<td>Board size, CEO duality, Board independence (fraction of all directors who are not employees of the firm), Largest 5 institutions ownership, All institutions ownership, The level of public pension fund ownership G-index</td>
<td>Fixed Effects Regression: CEO compensation is found to be positively and significantly affected by board size and CEO duality, and negatively affected by institutional ownership. Pay-performance sensitivity has a negative and significant relationship with board size, G-index, institutional ownership, and pension fund ownership, and positive and significant association with CEO-duality.</td>
<td></td>
</tr>
<tr>
<td>Basu et al. (2007)</td>
<td>A sample of 174 large Japanese corporations during 1992–1996</td>
<td>CEO cash compensation</td>
<td>Board size, The number of outside directors, An outside director indicator, A keiretsu indicator, A main bank indicator Ownership variables, Directors’ ownership, A family (“Dozoku”) indicator</td>
<td>OLS Regression: CEO cash compensation is positively and significantly related to directors’ ownership and family ownership, firm size, growth opportunities, and executive tenure. CEO cash compensation is negatively and significantly related to education, LEV, and their outside director indicator. Other variables are non-significant.</td>
<td></td>
</tr>
<tr>
<td>Cyert et al. (2002)</td>
<td>A sample of 1,648 US firms for the period 1992-1993</td>
<td>Salary, Equity-based compensation</td>
<td>Firm size, Firm performance, Largest ownership, non-CEO, Largest ownership, CEO, CEO's ownership, Compensation committee's Ownership, Default risk, Financial leverage, Growth opportunity</td>
<td>OLS Regression: Equity-based compensation is negatively related to the largest shareholder's ownership, compensation committee's ownership, default risk, leverage. CEO duality, firm size, growth, opportunities, while the presence of external blockholders is positively and significantly correlated with equity-based compensation. Only CEO's ownership is found to have a positive and significant relationship. However, other variables have no role in determining the CEO salary.</td>
<td></td>
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<tr>
<td>Lee (2009)</td>
<td>A sample of 66 Australian and 84</td>
<td>CEO equity-based compensation</td>
<td>Financial performance: Ownership concentration</td>
<td>OLS Regression: For Australian improving companies, there is no significant relationship between CEO performance-based payment and</td>
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</tbody>
</table>
Singaporean firms for the period 2001 to 2003

Largest shareholder
Top 20 shareholders
Board independence
Independent directors on remuneration committee
Non-executive directors on remuneration committee
CEO duality
Directors ownership

the improvement in firm performance, nor in board structure. However, the proportion of performance pay is significantly and positively associated with total revenue. With respect to Singaporean improving companies, the only significant and positive variables are total revenue and CEO change (with a negative coefficient). Other board and performance variables are not statistically significant.

Anderson and Bizjak (2000)
A random sample of 75 NYSE firms between 1985 and 1994
Salary, Bonus, Fixed portion of total compensation, ESOs
Full option portfolio levels, Option sensitivity
The fraction of outside directors on the committee
Outside executives sitting on compensation committees. The presence of the CEO on their own CCs
Fixed Effects Regressions
Salary and bonus pay is negatively related and the value of new option grants is positively related to the fraction of outside directors on the compensation committee. Pay-for-performance sensitivities indicate that CEO option pay is more sensitive to firm performance as the fraction of outside directors’ increases. They did not find evidence that the fraction of outside executives grant higher levels of pay. CEOs serving on their own CCs do not earn higher levels of salary or bonus. New grant levels, full option portfolio levels, and option sensitivity (new and full) are significantly lower as compared to CEOs that do not serve on the CC.

Sun and Cahan (2009)
A sample of 825 US firms for 2001
CEO cash compensation
ROE, Composite Measure of compensation committee quality:
CEO Appointed Directors
Senior Directors CEO
Directors Director
Shareholdings Additional Directorships
Committee Size Growth opportunities (log of M2B)
Loss-making dummy
OLS Regression
CEO cash compensation is more positively associated with accounting earnings for firms with high compensation committee governance quality than for firms with low compensation committee governance quality. CEO cash compensation is significantly positively associated with accounting performance and market performance. CEO cash compensation is more positively associated with accounting earnings for firms with a lower proportion of directors appointed during the tenure of the incumbent CEO, a higher proportion of senior directors sitting on compensation committees, a high proportion of directors on the compensation committee who are CEOs of other firms, a high proportion of directors with three or more additional directorships sitting on compensation committees. No significant effect of director ownership on the compensation committee on the association between CEO cash compensation and accounting earnings
<table>
<thead>
<tr>
<th>Study</th>
<th>Sample Description</th>
<th>Key Variables</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vafeas (2003)</td>
<td>A sample of 271 US firms between 1991 and 1997</td>
<td>CEO cash compensation, CEO long-term pay, Total CEO compensation</td>
<td>Fixed effects regression</td>
<td>No difference in the level of CEO pay and the sensitivity of pay to performance between firms with committee insiders and all others. After the reforms, the pay-for-performance relation for such firms improves, and the mix of fixed to variable pay declines, becoming more similar to pay practices in other firm.</td>
</tr>
<tr>
<td>O'Reilly et al. (1988)</td>
<td>A sample of 105 US firms for 1984</td>
<td>CEO cash compensation</td>
<td></td>
<td>Salary levels of outside directors, both those on the board and on the compensation committee, are associated with CEO compensation. CEO compensation is greater when CEOs from other firms sit on the firm’s compensation committee.</td>
</tr>
<tr>
<td>Cornett, Marcus &amp; Tehranian, (2008)</td>
<td>S &amp; P 100 firms, from 1994-2003</td>
<td>Discretionary Accruals, corporate governance variables related to institutional ownership, management characteristics, and executive compensation</td>
<td>Multiple regression with multiple tools</td>
<td>They find that earnings management through the use of discretionary accruals responds dramatically to management incentives. Earnings management is lower when there is more monitoring of management discretion from sources such as institutional ownership of shares, institutional representation on the board, and independent outside directors on the board. Earnings management increases in response to the option compensation of CEOs.</td>
</tr>
</tbody>
</table>
Panel C
Summary of key studies investigating the relationship between corporate governance and earnings management

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample/Setting</th>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Analysis Techniques</th>
<th>Findings</th>
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</thead>
</table>
Davidson et al. (2005) | A sample of 434 listed Australian firms for the financial year ending in 2000. | Discretionary accruals measured by the modified-Jones (1995) model and small profits or small changes in earnings (Holland and Ramsay, 2003). | Board composition and audit committee | OLS regression | A majority of non-executive directors on the board and on the audit committee are significantly associated with a lower likelihood of earnings management. However, voluntary establishment of an internal audit function and the choice of auditor are not significantly helpful in constraining earnings management.


Benkel et al. (2006) | A sample of 666 Australia firm-year observations, over the fiscal years 2001, 2002 and 2003. | Discretionary accruals measured by DeAngelo (1986) | Independent board and Audit committee | OLS regression | A higher independence of board and audit committee is associated with reduced levels of earnings management. Interestingly, they only find these relationships exist in large firms but not small firms.

Chen et al. (2006) | A sample of 2324 (China) observations during 1998– | Discretionary accruals measured by modified Jones | Specialised Auditor | Means Differences and OLS | They document that industry specialist auditors constrain
<table>
<thead>
<tr>
<th>Year</th>
<th>Authors</th>
<th>Sample Description</th>
<th>Methodology</th>
<th>Findings</th>
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</thead>
<tbody>
<tr>
<td>2002</td>
<td>Osma and Noguer (2007)</td>
<td>A sample of 155 Spanish quoted companies during the period 1999–2001.</td>
<td>Discretionary accruals measured by Jones (1991) model, the Jones cash-flow model, and the marginal model (Peasnell et al. 2000b)</td>
<td>Board composition and the existence of board Monitoring committees. OLS regression. In Spain, the key practice to constrain earnings management is institutional directors, unlike UK and US, where independent directors play a significant role. The existence of an independent audit committee does not affect earnings management, whereas the existence and composition of a nomination committee affects the role of independent directors in constraining earnings management.</td>
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<td>Liu and Lu (2007)</td>
<td>A sample of 5,977 firm-year observations using China's listed companies.</td>
<td>Discretionary accruals measured by modified Jones (1995) model.</td>
<td>Corporate governance index. OLS regression. Firms with higher corporate governance levels have lower levels of earnings management. Good corporate governance mitigates agency conflicts between the largest shareholders and the minority shareholders.</td>
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<td>Ebrahim (2007)</td>
<td>A sample of US manufacturing companies in 2000.</td>
<td>Discretionary accruals measured by the modified Jones (1995) model.</td>
<td>The activity of both the board and audit committee. t-tests and OLS regression. Earnings management is negatively related to both board and audit committee independence; this relation is stronger when the audit committee is more active. However, this result is not valid for the board activity.</td>
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<tr>
<th>Authors</th>
<th>Sample Description</th>
<th>Methodology</th>
<th>Findings</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baxter and Cotter (2009)</td>
<td>A sample of 309 Australian firms in 2001. Two measures of earnings quality based on discretionary accruals measured by Jones (1991) and Dechow and Dichev (2002) models.</td>
<td>Board composition and audit committee. Pooled OLS regression</td>
<td>The formation of an audit committee reduces EM but audit committee accounting expertise is not associated with EM. No association found between other audit committee characteristics, such as independence, size and meetings, and both earnings quality measures.</td>
<td></td>
</tr>
<tr>
<td>Jaggi et al. (2009)</td>
<td>A sample of 770 firm-year observations from 1998 to 2000 using Hong Kong companies. Discretionary accruals measured by Kothari et al. (2005) and Francis et al. (2005).</td>
<td>Independent boards OLS regression</td>
<td>Independent boards provide effective monitoring of EM. However, this is moderated in family-controlled firms, which suggests that an increase in the proportion of independent directors to strengthen board monitoring is unlikely to be effective in family controlled firms.</td>
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<tr>
<td>Dimitropoulos and Asteriou (2010)</td>
<td>97 non-financial firms listed on Athens Stock Exchange in Greece from 2000 to 2004. Discretionary current accruals (using the modified-Jones model)</td>
<td>Board size and independence. OLS regression</td>
<td>They find that board independence is significantly and negatively related to their EM proxy.</td>
<td></td>
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<tr>
<td>Cornett, McNutt &amp; Tehranian, (2009)</td>
<td>Largest Bank Holding Companies (BHC) in US from 1994-2002, 593 bank years were employed. Earnings Management CEO pay-for-performance sensitivity, board independence, and capital Simultaneous equation approach</td>
<td>They find that CEO pay-for-performance sensitivity (PPS), board independence, and capital are positively related to earnings and that earnings, board independence, and</td>
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</table>
capital are negatively related to earnings management. They also find that PPS is positively related to earnings management. Finally, PPS and board independence are positively related and the relationship is bidirectional. While both PPS and board independence are associated with higher earnings, their results indicate that more independent boards appear to constrain the earnings management that greater PPS compels.

**Panel D**

**Summary of Key Studies** investigating the effect of Financial Crisis on earnings management, CEO compensation and corporate governance

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample/Setting</th>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Analysis Techniques</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lin &amp; Shih (2002)</td>
<td>All non-financial industries 513 firms, 10,260 firm-quarter observation (1989-1993)</td>
<td>Total accruals are estimated for each firm individually management</td>
<td></td>
<td>using time-series data, residual is used as a proxy for earnings</td>
<td>Earnings are managed downwards during very strong or weak earnings</td>
</tr>
<tr>
<td>Study</td>
<td>Number of Firms/Year</td>
<td>Industry/Time Period</td>
<td>Methodology</td>
<td>Findings/Relevance</td>
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<tr>
<td>Kousenidis, Ladas &amp; Negakis (2013)</td>
<td>552 firms 2008-2011</td>
<td>Earnings quality Performance-matched model (2005)</td>
<td>Leverage, logarithm of the ratio of market capitalization, and operating cash flow</td>
<td>GICS are used to classify firms in industries</td>
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</table>

Evidence for downward earnings management is found during the crisis period.

Downward earnings management is used in the first year that a firm makes a loss, less regulated industries engage in a higher level of earnings management.

Managers of distressed firms engage in income decreasing earnings management.

Earnings management decreases during financial crisis.
3.6 Research Gaps

Prior empirical literature provides evidence of a relationship between executive compensation and earnings management. The rising number of cases concerning executive compensation which is not commensurate with firm performance heightens concerns that executives engage in earnings management. It is, however, claimed that a well-structured and functional corporate governance mechanism will overcome any problems regarding earnings management (Larcker and Richardson, 2004; Bedard et al., 2004; Benkel et al., 2006; Davidson et al., 2005). An effective and strong mechanism can combat appropriation of firm resources in a form of disproportionate executive compensation. It is also claimed that firms are likely to engage in earnings management when meeting targets becomes a problem (Peasnell, Pope and Young, 2000; Graham et al., 2005; Choi et al., 2006). The GFC is one such period where meeting targets was difficult. Interestingly, a corporate governance mechanism whether in a crisis period or not is expected to monitor and control the behaviour of executives. Surprisingly, only a few studies have examined the relationship between CEO compensation and earnings management and the monitoring role of corporate governance during the crisis period.

Even though prior studies have examined the interrelations between CEO compensation, earnings management and corporate governance (Lin & Shih, 2002; Cornett et al., 2008; Kousenidis, Ladas & Negakis, 2013), none have examined these relationships and the moderating effect of corporate governance mechanisms during the GFC. Nevertheless, studies on the relationship between CEO compensation and earnings management and executives’ ability to manipulate earnings during crisis period highlight the importance of having strong corporate governance structure to effectively reduce the negative impact of earnings management and control abuse of the compensation structure of executives at all time. Identifying the impact of earnings management during crisis
period allows standard regulators to issue more disclosure requirements to curtail the incidence of earnings management and also to help remuneration committee to design appropriate compensation structure which will align the interest of both executives and shareholders. The ability of corporate governance to monitor and control executives’ behaviour at all times, even during a crisis period and moderate the relationship between CEO compensation and earnings management, is of fundamental importance to regulators, policy makers and investors. It provides an opportunity for regulators and policy makers to improve existing corporate governance structures and introduce new requirements and ensure that firms implement a strong corporate governance culture to achieve firm value. Investors and prospective investors feel protected and assured when there is evidence of the existence of functional quality corporate governance mechanism.

Even though many studies have examined various issues on executive compensation, earnings management and corporate governance mechanisms, these studies have assumed no differences in periods. Arguably, however, recognising the potential effect of differences in economic outlook is very important as both earnings management and CEO compensation may be affected by the economic environment. Prior literature also reveals limited research on: (i) whether or not there is any potential variations in the relationship between CEO compensation and earnings management with different economic environments (ii) how corporate governance moderate the relationship in different economic environment; and (iii) whether the strength or weakness of the corporate governance makes any difference in moderating the CEO compensation and earnings management relationship.

Australia has experienced a rise in levels of executive compensation (Australian Productivity Commission 2009). The cause may equally be attributed to the weakness in
the corporate governance mechanisms to prevent executives from manipulating earnings to increase compensation. However, a review of Australian research does not only show that studies on CEO compensation and earnings management is limited, but also reveals gaps within existing studies. For example, the relationship between CEO compensation and earnings management has not yet been well examined in Australia. A review of the literature shows that many studies relating to issues on CEO compensation have examined the structure and determinants of compensation (see Merhebi et al., 2006; Matolcsy and Wright, 2006, Chalmers et al., 2006; Murphy, 1999; Jensen and Murphy, 1999; Sanders and Carpenter, 1998). Other studies have examined the relationship between compensation and firm performance (Fleming and Stellios, 2002; Coulton and Taylor, 2002; Chalmers, Koh and Stapledon, 2006). Another aspect of compensation not really exhausted in terms of research is the cash and bonus components of compensation. However, cash bonuses represent a greater proportion of variable compensation particularly and therefore cash is utilised as a measure of CEO compensation (see Merhebi et al., 2006; Matolcsy, 2000). Australia, therefore, offers a setting where a substantial proportion of CEOs are compensated by cash only, however, cash bonuses are based on accounting measures of performance (e.g. earnings), not market measures (see Matolcsy and Wright, 2006a; Matolcsy, 2000).

A further review of Australian studies on earnings management reveals a gap. The review shows documented evidence of earnings management in terms of income-smoothing (Black et al., 1998); price control and political concerns (Monem, 2003; Lim and Matolcsy, 1999; Godfrey and Jones, 1999); 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, 2007; Davidson et al., 2005; Hsu and Koh, 2005; Koh, 2003); economic setting
of Australia’s ‘Old’ and ‘New’ economies (Jones and Sharma, 2001); banking industry (Anandarajan et al., 2007); and earnings restatements (Ahmed and Goodwin, 2007). These studies indicate that there is a vast gap that needs to be filled, including extending the literature on the effectiveness of corporate governance to mitigate and moderate the negative effect of earnings management on CEO compensation for shareholders’ benefit.

Arguably, the GFC represents an unusual period of financial uncertainty and is likely to affect the relationship. Therefore, examining its effect on the CEO compensation and earnings management relationship is significant. This thesis fills the gap in the literature on the relationship between CEO compensation and earnings management by further integrating how economic environment (GFC) and corporate governance affect the relationship in different ways. Consistent with predictions of agency theory, the potential findings support the role of corporate governance playing a crucial role in restraining managerial opportunism. The results may provide evidence to support regulators with sufficient justification to impose additional corporate governance requirements so that better governance structures are created. This may ensure firms maintain good governance procedures that reduce harmful earnings management and are less vulnerable to opportunistic earnings management. Shareholders’ rights are also well-protected. Therefore, it is important to examine variations in the relationship between CEO compensation and earnings management and the moderating effect of corporate governance, and of course the effect of the financial crisis.

3.7 Conclusion

This chapter extensively reviewed and discussed previous literature on CEO compensation, earnings management and corporate governance. Generally, the literature reviewed demonstrates that studies that jointly examine all the three issues, namely,
executive compensation, earnings management and corporate governance is scarce, are of interest to researchers, investors and regulators around the world. Research is lacking on the conditions that moderate or alter the relationship between CEO compensation and earnings management.

One of the most notable limitations in prior studies on the relationships among CEO compensation, earnings management and corporate governance is that, distinctions are not made between different periods. Most of the previous literature on long period studies do not account for the effect of time periods or recognise the effect of time periods such as different economic environments or periods, indicating that economic environment and different periods do not influence the relationship. This limits the validity and reliability of their findings and recommendations and thus might produce misleading or inaccurate findings. This study, will therefore, utilise panel data to examine the role and effect of corporate governance on the relationship between CEO compensation and earnings management. This study also tests the variations in the relationship between CEO compensation and earnings management over a long-term period, however, it examines the impact of the GFC by categorising the period into three -Pre-Crisis, During Crisis and Post-Crisis - in order to account for the effect of the period.

The empirical results will be significant in the revision and formulation of new corporate governance regulations and contribute to the debate on enforcement, justification of additional corporate governance requirements and improvement in corporate governance practices. It is anticipated that standard setters and regulators will recognise the effect of an economic crisis and ensure more accounting disclosures will curb managers’ tendency to engage in earnings management. Remuneration committees will also be able
to set optimal compensation structures and appropriately delink the effect of contract-driven earnings management from compensation structure. In conclusion, this study attempts to mitigate the limitations and fill the gaps left by the previous studies. The next chapter discusses the framework and hypotheses developed for this research.
Chapter 4

Conceptual Framework and Development of Hypotheses

4.1 Introduction

The purpose of this chapter is to present an in-depth discussion based on theories, extant literature and assumptions to develop hypotheses. The hypotheses so developed identify with the impact of the GFC and the moderating effect of Corporate Governance on the relationship between compensation and earnings management. Developing a testable model to examine the preposition of the study requires the development both theoretical model and hypotheses. Consequently, this chapter first describes a conceptual framework for the study by linking the variables and proxies exhibited in the study to relevant theories. The structure of this chapter is as follows: Section 4.2 describes the conceptual framework, while Section 4.3 draws attention to the developed hypotheses including in-depth discussion on compensation components and the link to earnings management proxy. It also describes what constitutes quality corporate governance. Section 4.4 examines the effect of the GFC and finally, Section 4.5 concludes this chapter.

4.2 Conceptual Framework

This conceptual framework sets the study in a context and outlines the approach employed to address the research questions. The conceptual framework of this study is contingent upon a number of assumptions inferred from the extant literature. The extant literature asserts the separation of ownership and control of corporations and consequently, their varied and divergent interests. The effect of this inter alia, is a conflict of interest between management and shareholders. Boards of directors play the fiduciary role to protect the interests of shareholders and eliminate or reduce any conflict of interest. Setting compensation of executives to align with the interests of managers
with shareholders’ interests will reduce conflict (Jensen and Murphy, 1990). In order to ensure CEOs protect shareholders’ interests, compensation is linked to performance. For example, it is claimed that the level of bonus compensation is triggered by achieving certain financial predetermined target(s) (Matolcsy, 2000).

However, recent studies suggest that compensation tied to accounting measures may motivate managers to manipulate accounting numbers (Goldman and Slezk, 2006; Bolten et al., 2006). The claim further states that performance measures can be manipulated for short-term gains at the expense of long-term shareholder value. Consequently, this study therefore, argues that executives may manipulate accounting numbers to achieve certain targets that will enhance their compensation. The compensation scheme therefore, has a double effect: it can motivate CEO to work hard (interests alignment effect) or encourage manipulative actions such as accrual management (opportunistic self-interest effect). The extant literature also suggests that since the use of performance-based schemes induces CEO to manipulate earnings, there should be an increased need for board oversight.

4.2.1 Assumptions from the Conceptual Framework

This section states the assumptions of this study derived from the discussion on the conceptual framework. First, based on agency theory this study assumes the separation of ownership (risk-taking) and control (decision-making) in the corporate world has encouraged managers and shareholders to maximise their own wealth (Berle and Means, 1932; Gomez-Mejia and Wiseman, 1997). Accounting standards allow the use of accrual accounting as a tool to provide an accurate description of a company’s real situation (Badertscher et al., 2010; Louis and Robinson, 2005). The role of accruals is to adjust the cash flows in such a manner that earnings numbers better reflect the performance of
the firm (Dechow and Dichev 2002). This is done to overcome matching difficulty inherent in cash flow and the timing of transactions (Yuan, TamKang and TamKang, 2009). However, it also provides an opportunity for managers to engage in earnings management. Depending on what objective management seeks to achieve, they may adopt various types of earnings management including discretionary accruals to achieve personal goals (Jaggi and Lee, 2002; Healy and Wahlen, 1999).

The extant literature posits that managerial compensation and debt contracts are the main motivations for earnings management (see Watts and Zimmerman, 1990). Prior studies argue that in general the greatest cause of earnings management is the self-interest motivation of people (see Bauman and Shaw, 2006; Bergstresser and Philippon, 2006; Ronen et al., 2006; Gao and Shrieves, 2002; Healy, 1985; Narayanan, 1996). Prior research posits that CEOs engage in earnings management in order to improve their reported earnings (DeGeorge et al., 1999; Burgstahler and Dichev, 1997; Gaver et al., 1995).

Consequently, the study further assumes that agents are self-seeking and as rational beings, with control over firms, may be opportunistic and self-interest at the expense of the owners. Accordingly, given the opportunity, management will manipulate earnings to influence their compensation since the level of the ‘at risk’ component of compensation is triggered by the achievement of certain predetermined earnings targets (Matolcsy, 2000). CEO compensation during the recent financial crisis has been a concern and a number of debates have been renewed. This is necessary, especially when some studies argue that the challenge posed by financial crisis may create strong incentives for engaging in opportunistic earnings management (discretionary accruals choices) by managers (Chia et al., 2007; Ebrahim, 2007; Peasnell et al., 2006). The basis
of the argument is that during a severe financial downturn management artificially increases its performance using accounting manipulations until the economy recovers. The likelihood of engaging in earnings manipulation is that during recessions, it is more difficult to meet targets and thus companies are more likely to become fragile (Choi, Kim, and Lee, 2011).

Financial crisis has partly, been attributed to failures and weakness in corporate governance structures which did not prevent harmful managerial practices. This study is of the opinion that the GFC was a unique event in which the oversight responsibility was crucial. It is, therefore, important to examine the moderating effect of corporate governance structures; that is the effectiveness of corporate governance in reducing the negative effect of earnings management on CEOs compensation during crisis period. This study, however, assumes that corporate governance provides a framework to ensure shareholders achieve returns on their investments (Shleifer and Vishny, 1997). The underlying suggested propositions of the conceptual framework, therefore, is that management may manipulate financial reporting process and engage in earnings manipulation to maximise their own wealth (see Jensen and Meckling, 1976; Watts and Zimmerman, 1986). These circumstances make the monitoring role of corporate governance necessary in minimising earnings manipulation. There is widespread concern that the surge in CEO compensation and recent cases of accounting fraud reflect a failure of corporate governance.

4.3 Development of Hypotheses
The formulation of testable model to examine the aforementioned prepositions regarding the association of earnings management, executive compensation and corporate governance mechanisms requires the development of hypotheses. This involves creating
conjectural formal statements that present the expected relationship between dependent and independent variables. The following section discusses these variables: earnings management, CEOs compensation and the moderating effect of corporate governance, concurrent with the GFC to appraise their relationship. The hypotheses relate to the research questions of this study which are re-stated as follows:

1. “To what extent does the relationship between CEO compensation and earnings management of ASX firms differ between the financial phases of pre-GFC, during GFC and post-GFC?”

2. “To what extent is the relationship between CEO compensation and earnings management of ASX firms moderated by the strength of corporate governance?”

3. “To what extent do financial market phases and the strength of firm’s Corporate Governance jointly affect the relationship between CEO compensation and earnings management of ASX firms?”

4.3.1 The Effect of the GFC on the CEO Compensation and Earnings Management Relationship

The previous literature posits that managers engage in earnings management to influence their compensation. It also documents that economic environment can cause a change in CEO compensation and earnings management. This study argues that the relationship between CEO compensation and earnings management may alter, depending on the nature and form of factors that influence each of them. One common factor that influences both CEO compensation and earnings management is the economic environment (see Habib et al., 2013; Fels, 2010; Ahmed et al., 2008; Matolcsy, 2000; Han and Wang, 1998; Burgstahler and Dichev, 1997; Jones, 1991). Prior research documents both the existence and magnitude of earnings management in extreme situations such as macroeconomic conditions, and therefore, has the potential to affect
the relevance of earnings (see Rosner, 2003; Johnson, 1999; Richardson et al., 1998). However, the debate on how economic financial crisis affects earnings management practices is not so conclusive. According to Strobl (2013), managers are more likely to engage in earnings manipulations during an economic boom as opposed to a recession. In the periods of economic boom, managers are more overconfident, they tend to engage more in manipulative accounting practices (Schrand and Zechman, 2012) and employ more optimistic forecasts (Hribar and Yang, 2011). Prior literature discusses earnings management and magnitude in various economic environments and found that companies manipulate earnings when they experience financial difficulty (Burgstahler and Dichev, 1997; Graham et al., 2005; Charitou et al., 2007).

Only a few studies have examined the impact of financial crisis on CEO compensation and earnings management, but some evidence emerged from the 1997 Asian Financial Crisis (AFC). This took the form of earnings management through discretionary accruals choices (Kim and Yi, 2006). There is documented evidence which supports the view that managers engage in more income-decreasing earnings management during an economic recession. The motivation could be to conceal the true earnings performance (Choi, Kim and Lee, 2011) or to project a desirable improved financial image of their firms. This may be to impress the financial market participants for improved borrowing terms during debt renegotiation. There is also the motivation to access equity capital from the market with ease and at lower cost. Market may tolerate poor performance during a recession in times of crisis and so may depress earnings further for the benefit of managers. This could be done through accruals by ‘big bath’ method (see Iatridis and Kadorinis, 2009; Ahmed et al., 2008; Chia et al., 2007; Saleh and Ahmed, 2005; Healey and Wahlen, 1999; Dechow et al., 1995).
This study, however, argues that the GFC presents an enormous challenge to capital markets and indeed executives to perform well in order to maintain confidence in the market or sustain their companies during an economic downturn (Shen and Chih, 2007; Rahman and Ali, 2006). Rosner (2003) documented that companies engage in income-increasing earnings manipulation in the case of firms that become bankrupt. The author documented in this respect that companies engage in earnings management practices ex ante, when they are in financial distress. It is argued that the GFC with its associated credit crunch and the follow-on economic recession could not prevent a large number of companies from paying big bonuses and compensations to their executives and contributed to the crisis. Moreover, evidence is documented that high risk-taking behaviour by executives to elicit high compensation contributed to the world economic crisis (Fels, 2010; Nesbitt, 2009). Consequently, the challenge posed by financial crisis therefore, may create strong incentives for managers to engage in opportunistic earnings management (discretionary accruals choices)(Chia et al., 2007; Ebrahim, 2007; Peasnell et al., 2006).

The synopsis of the above discussion is that managers may opt to influence their compensation in crisis period by managing earnings especially when the corporate performance is weak. This study supports the preposition that, to influence and maintain their compensation levels, executives may engage in earnings management even in the face of the crisis period when corporate performance is poor management. Even though Matolcsy (2000) finds no relationship between compensation (measured by cash) and firm performance during periods of economic downturn, however, his result suggests a positive association during periods of economic growth. Based on this discussion, this study states the following three hypotheses that relate to Research Question 1 which is concerned with how the relationship between CEO compensation and earnings
management changes from Pre-GFC to Crisis and to Post-GFC periods. In other words, it concerns whether or not the GFC provides evidence of differential impacts on the relationship between CEO compensation and earnings management. It is hypothesised that:

**H1a-c:** There is a stronger relationship between CEO compensation and earnings management during the Crisis period than the Pre-GFC and Post-GFC.

The CEO compensation as stated above has three variant measures: fixed compensation, bonus compensation and total compensation. Each of these measures is used to test for this hypothesis; hence the above hypothesis has three variants a, b, c and d, e, f, etc.

The shock, challenges and the consequences of the GFC reveal poor and fragile monitoring systems existed in many firms (UNCTAD, 2010) and proved that harmful manipulations by managers could not be stopped (Clarke, 2010; Kirkpatrick, 2009; Berrone, 2008). This study argues that this appraisal is able to help increase the scrutiny and monitoring systems of firms in the aftermath of the GFC. Consequently, firms may resolve to reduce discretionary accruals and for that matter, the relationship of CEO compensation and earnings management weakens. Firms may also change compensation plans for executives to reduce incentives to manage earnings. This may cause the relationship between CEO compensation and earnings management to alter. Consequently, this study tests whether or not the relationship between CEO compensation and earnings management changes post-GFC. This study assumes that the increased scrutiny provides less incentive to manage earnings and cause executives’ compensation schemes to be redesigned post-GFC. The study therefore hypothesises that:

**H1d-f:** The relationship between CEO compensation and earnings management in Post-GFC is weaker than in the Crisis period.
Furthermore, as a result of increased scrutiny and monitoring, causing the relationship between CEO compensation and earnings management to weaken in the Post-GFC period, this study argues that the relationship is weaker in the Pre-GFC period. This is because before the GFC the monitoring systems of firms did not perform well and routines did not safeguard against harmful manipulations by managers (Clarke, 2010; Kirkpatrick, 2009; Berrone, 2008). This therefore leads this study to hypothesise that:

**H1g-i: The relationship between CEO compensation and earnings management in the Post-GFC is weaker than in the Pre-Crisis period.**

### 4.3.2 The Effect of Corporate Governance on CEO Compensation and Earnings Management Relationship

The next set of hypotheses relates to Research Question 2 which seeks to investigate whether corporate governance moderates the relationship between CEO compensation and earnings management. It is argued that corporate governance practices can impact on the executive compensation (Chalmers, Koh and Stapledon, 2006). Given that CEO compensation is viewed as a corporate governance solution to reduce agency costs (Jensen, Murphy and Wruck, 2004; Sapp, 2008), corporate governance needs to address compensation policy (Ozkan, 2007). The economic downturn may have provided incentives for management to manipulate earnings to influence compensation, however, quality corporate governance structures can moderate this relationship. It is posited that quality corporate governance mechanisms may monitor executives’ behaviour, including restraining earnings management. This will thereby control executive compensation that may be attributable to earnings management (Cohen et al., 2004; Beasley et al., 2009; Larcker and Richardson, 2004). A strong link is established between aggressive
accounting behaviour and executive compensation (Gao and Shriives, 2002; Cheng and Warfield, 2005; Bergstresser and Philippon, 2006).

However, prior studies posit that an effective corporate governance system can limit the negative effect of earnings management on compensation and effectively restrict expropriation by executive compensation (see Klein, 2002; La Porta et al., 1998; Dechow, Sloan and Sweeney, 1996; Beasley, 1996; Warfield, Wild and Wild, 1995). This is because an efficient monitoring system reduces management’s capacity to manage earnings (Ashbaugh et al., 2004; Gul and Tsui, 2001; Peasnell et al., 2000a). Corporate governance may, therefore, provide an effective oversight of managers’ activities in the interest of shareholders and other stakeholders (Gompers, Metrick and Ishii, 2003; Talley and Johnson, 2004). On the other hand, the presence of an ineffective corporate governance structure may lead to agency problems which ultimately lead to higher executive compensation (Core et al., 1999). Therefore, where a weak corporate governance structure exists, executives are able to extract excessive compensation.

This study, therefore, makes a distinction between strong corporate governance and weak corporate governance and tests how corporate governance moderates the relationship between CEO compensation and earnings management. Based on this discussion, this study hypothesises that:

\[ H2a-c: \text{The relationship between CEO compensation and earnings management is weaker (stronger) for firms with strong (weak) corporate governance mechanisms.} \]
4.3.2.1 Determining Strong Corporate Governance

The following section discusses some characteristics of strong corporate governance mechanisms. This study uses interchangeably, the words effective, good and quality for strong corporate governance. It is posited that quality corporate governance mechanisms will have the characteristics to be able to monitor executives’ behaviour, including restraining earnings management. This will thereby control executive compensation that may be attributable to earnings management (Cohen et al., 2004; Beasley et al., 2009; Larcker and Richardson, 2004). The various corporate governance standards and best practices codes give explicit guidelines that depict a quality corporate governance structure (Sarbanes-Oxley Act of 2002; ASX Recommendations, 2003, as amended in 2010). These codes and guidelines identify the various bodies or mechanisms that must be present to ensure quality corporate governance.

Unlike other corporate governance studies that use the various individual corporate governance attributes to examine the effects on compensation, the creativity of this current study is that it constructs corporate governance index to measure the strength of firms’ corporate governance level. A number of corporate governance attributes (as prescribed by the various corporate governance standards and best practices codes) emerge as significant to potentially monitor executives’ behaviour (see Adams and Ferreira, 2007; Klein, 2002a; Dechow et al., 1996; Hartzell and Starks, 2003), and therefore, are included in the construction of the governance index. These include, but not limited to boards’ characteristics (independence, expertise and diligence). Since the work of the board is done in committees (Adams, 2003), the study includes the characteristics of the various board subcommittees that are set up (audit, nomination, nomination and remuneration committees). This study focuses on the internal mechanism as an effective tool to influence compensation. The ensuing discussions
focus on the attributes of board of directors and various committees as proxy for quality of corporate governance. These are inferred from the ASX guidelines Sections 1, 2, 4 and 8 and other relevant sections for good corporate governance practices. The discussion then proceeds with an emphasis that individual hypotheses are not developed for each attribute but rather, are combined to comprehensively reflect the strength level of firms’ corporate governance.

### 4.3.2.2 Board of Directors

The underlying analysis of this study is contingent on two functions performed by board of directors; the setting of executive compensation and the monitoring of executive behaviour (Adams and Ferreira, 2007). The board is expected to represent shareholders and serve as their first line of defence against a self-serving management team (Fama and Jensen, 1983). The problem with corporate internal control systems starts with the board of directors. One of the most important elements of corporate governance influencing executive behaviour involves the board of directors, whose responsibility is to provide independent oversight of management performance and to hold management accountable to shareholders for its actions (DeFond and Jiambalvo, 1994; Dichev and Skinner, 2002). In line with the extant literature, this study discusses board attributes including independence of board, board size, composition and leadership structure (Denis and McConnell, 2003; Smith, 1996).

### 4.3.2.3 Board Independence

The board of directors is a very important part of the corporate governance structure since they monitor the top executives. It is argued that the structure of the board of directors determines the level of control over a CEO (Boeker, 1992). The academic literature examines the effect of board independence and makes an important distinction
between inside and outside directors (Klein, 2002; Peasnell, Pope and Young, 2004). Board members are deemed to be independent if they are not employees of the company or its auditors and do not have any material relationship with the company (Holmstrom and Kaplan, 2003). The board serves as shareholders’ representatives and to fulfil their duties as supervisory body, they are to be as independent of the executive as possible. They strengthen the monitoring of the firm’s management through good corporate governance.

Board independence is linked to both the quality of financial information and executive actions (Dechow et al., 1996; Klein, 2002). It is conjectured that the higher the number of independent outside directors on the board, the more efficient the board is in monitoring the executives (Holmstrom and Kaplan, 2003; Chen and Jaggi, 2000). Boards dominated by outside directors are considered to be in a better position to monitor senior executives, since they are likely to be more independent of the firm’s executives. It is, therefore, crucial that the directors are independent so that they can monitor leading executives in an unbiased manner (Fich and Shivdasani, 2004).

There is, however, a counter-argument proposing that completely independent boards may not be effective in monitoring management (Yermack, 1996). This school of thought argues that management is more likely to cooperate with board members with whom they are better acquainted and that, too many outsiders lose the expertise associated with officers serving on the board (Agrawal and Knoeber, 1996; Klein, 1998). Another argument is that independent directors are appointed and removed by executives. Therefore, outside directors may be compelled to take actions in favour of the top executive, especially in case of the top executive’s compensation (Shivdasani
and Yermack, 1999; Cosh and Hughes, 1987). They may regard their role as being primarily that of advising rather than monitoring (Franks et al., 2001).

Conversely, a general belief is that boards are more effective in their monitoring of management when there is a strong base of independent directors on the board (Beasley, 1996; Dechow et al., 1996). This is because independent directors are keen to maintain their reputations. It is also argued that independent non-executive board members can control the opportunistic behaviour of management (Jensen and Meckling, 1976). For example, board independence may help reduce the level of discretionary accruals (Peasnell et al., 2000; Klein, 2002) and avoid concealing poor corporate performance from stakeholders to gain private benefits (Anderson et al., 2004).

It is instructive to note that while insider directors may face distorted incentives due to their lack of independence on the firm’s CEO (Bushman et al., 2004), independent boards are efficient in restraining executives’ abuse of compensation practices (Brickley and James, 1987; Boyd, 1994). Therefore, including independent non-executive board members on the board curbs higher executive compensation payments (Berle and Means, 1932; Williamson, 1985; Mehran, 1995; Almazan and Suarez, 2003; Chalevas, 2011). The literature suggests having more independent outside directors will restrict pay excesses to a minimum and tie compensation to shareholder value (Holmstrom and Kaplan, 2003; Bebchuk and Fried, 2004).

In light of the above discussion, this study posits that an independent board of director is a cursor to quality corporate governance. The study, therefore, affirms relationship between the proportion of independent directors on board and the board’s capacity to
monitor executives’ behaviour. It is expected that board independence increases its ability to oversee and monitor executives.

4.3.2.4 Board Size

The extant literature, apart from the structure of the board, identifies size as another board characteristic equally relevant for its efficient monitoring and control activity (Calcagno and Renneboog, 2004; Yermack, 1996). As identified by a number of studies, the size of a board of directors, large or small is determined by specific firm variables such as the size of the firm, the asset size, Tobin’s Q, profitability (Lehn et al., 2004; Boone et al., 2007; Coles et al., 2008; Guest, 2008; Linck et al., 2008), the board culture, the nature of its work and by advisory needs (Guest, 2008; Andres, Azofra, and Lopez, 2005). The argument in the literature is not so much as to whether size of the board affects its operations but whether a smaller or a larger board increases efficiency. A number of studies also suggest a positive association between board size and CEO cash and total compensation (see Ghosh and Sirmans, 2005; Main et al., 1991; Conyon and Peck, 1998).

While some researchers argue that smaller boards are more efficient, others argue for larger boards. Coles et al. (2008) argue that larger boards allow for a broader range of expertise and have a better impact on firms’ decision-making processes. Larger boards may also have the advantage of a broader range of experience and subsequently possess greater collective information which is important for monitoring (Dalton and Dalton 2005; Lehn et al., 2004). With such monitoring power, larger boards may even be in a better position to prevent earnings management by executives (Xie, Davidson and Dadalt, 2003).
These advantages of larger boards, however, diminish in the presence of arguments raised by a number of studies. Though the above discussion suggests that the ability of larger boards to monitor can increase as more directors are added due to the possible benefits of specialisation, the benefits can be outweighed by the costs. It has been argued that poorer communication may be a feature of larger groups. There can also be problems of decision-making such as delay in approving management proposals becomes time-consuming. This is because differences in opinions may hamper achieving consensus and collaboration when dealing with larger boards (Jensen, 1993; Lipton and Lorsch, 1992).

The problem of coordination also makes supervisory control exercised by larger boards and the effective monitoring of management difficult (Jensen, 1993). Larger boards can be identified with the theory of free rider (Golden and Zajac, 2001). This is where every director feels is less responsible and therefore puts in less effort than required, presuming that another director will do it for them anyway (Jensen, 1993; Andjelkovic et al., 2002; Bebchuck and Fried, 2004). This situation makes larger boards more vulnerable to manipulation and CEOs may take advantage to control the board of directors (Yermack, 1996; Eisenberg et al., 1998) and make decisions in their favour.

There are several reasons why the more effective monitoring function of the board favours smaller boards than larger ones. In a situation where a smaller board exists, there can be less bureaucratic problems which may lead to better functional board and therefore efficiency. The efficiency of the board is also improved if management knows that they can be dismissed for bad behaviour. In line with this, Yermack (1996) posits that smaller boards are more likely to dismiss CEO in cases of inefficiency. These arguments support the preposition that smaller boards are more efficient in the
operations of a company (Gladstein, 1984; Jensen and Meckling, 1976; Jewell and Reitz, 1981; Olson, 1982). Though Grinstein and Hribar (2004) suggest that when the CEO is more involved in choosing board members (i.e. he/she sits on the Nomination Committee) a smaller board might actually mean that the CEO has more managerial power. Admittedly, the relationship between board size and executive pay can be more complicated.

Another advantage of smaller boards is that less agency problems exist and may lead to a more effective corporate governance structure and lower executive compensation (Core et al., 1999). They associate board size increases with compensation increases. The reason is that awarding larger pay may go unnoticed due to free-riding perspective. They contend also that discussions in smaller boards allow more time for individual contributions in a board meeting which helps in setting practical compensation contracts. This current study, therefore, argues that a smaller board will rather lead to strong corporate governance. A number of studies also suggest a positive association between board size and CEO cash and total compensation (see Gosh and Sirmans, 2005; Main et al., 1991; Conyon and Peck, 1998).

4.3.2.5 Chair/CEO Duality

The efficiency of boards depends on the degree to which boards are successful in carrying out their roles. One of the attributes relative to the efficiency of board of directors and for that matter the quality of corporate governance is the role duality of the CEO. This by extension emphasises the importance of the board’s independence from management. Among the functions of boards is to run meetings where decisions of hiring, dismissing and executive compensations are taken (Jensen, 1993; Levrau and Van den Berghe, 2007a). The extent literature and indeed a number of corporate
governance codes are all in favour of separating the role of the CEO and the chair of the board (Cadbury Report, 1992; Dechow et al., 1996; Brockmann, Hoffman, Dawley, and Fornaciari, 2004; Daily and Dalton, 1997; Westpha and Zajac, 1998).

In contrast, the stewardship or administrative or organisation theory perspective argues on the principle of “unity of command”. It is claimed that having clear and unambiguous authority concentrated in one person is important to effective management and may enhance organisational efficiency (see Anderson and Anthony, 1986; Barney, 1990; Cannella and Lubatkin, 1993; Donaldson and Davis, 1991; Sridharan and Marcinko, 1997; Boyd, 1995; Pi and Timme, 1993; Daily and Dalton, 1994). Such a leadership structure creates clear lines of authority to which management (and the board) can respond more effectively. This is seen as unconfused leadership which is important to organisational success. Such legitimacy is an important signal to stakeholders about who is accountable (Kim and Buchanan, 2008). There is also a suggestion that the influence of CEO on the board as chairman may be rendered ineffective when other governance mechanisms (board independence and audit committee) are combined (McWilliams and Sen, 1997; Coles and Hesterly, 2000).

However, from the agency theory perspective, having one individual in charge of both management and the board is not consistent with the concept of checks and balance. The separation, and for that matter the independent leadership is to ensure that boards are independent of management. It is also to ensure that control is not vested in one person to reduce the efficiency of the board (Brockmann, Hoffman, Dawley, and Fornaciari, 2004; Westphal and Zajac, 1998; Daily and Dalton, 1997). The dual office structure allows the CEO to exert more power over the decisions and practices of the board. It is also suggested that CEOs occupying both positions are less likely to be fired by the
board for poor performance (Goyal and Park, 2002). It also permits the CEO to effectively control information available to other board members and can make the board less effective in monitoring the CEO (see Jensen, 1993).

Malmendier and Tate (2004) argue that compensation may increase under role duality. The CEOs who are also board chairs influence executive compensation because they build a board of members over whom they hold strong influence (Taylor, 2004). For example, the CEO, as chair of the board, appoints independent non-executive members to serve on the board and who has the power to propose the compensation that independent non-executive directors should receive for their service. As a result, independent non-executive members may be inclined to agree with a CEO's self-serving proposals, including those that allow for excessive compensation for the CEO (Core et al., 1999). Indeed, several studies posit that CEO duality significantly determines executive compensation levels (see Grinstein and Hribar, 2004; Pollock et al., 2002; Core et al., 1999; Brickley et al., 1997; Main et al., 1994; Westphal and Zajac, 1994; Main 1991). The separation of the roles of the CEO and the chairman of the board is, therefore, pivotal to board’s efficiency and indeed the quality of corporate governance. This study therefore proposes that the separation of board chairman and CEO roles enhances the quality corporate governance. Hence, in the construction of corporate governance index, non-duality is coded 1, and zero if otherwise.

4.3.2.6 Audit Committee

Board committees tend to have specific tasks that are performed for and on behalf of the board. The responsibility of monitoring managerial performance in general and financial disclosures in particular, is delegated to audit committees. The presence of an audit committee is required to consolidate corporate governance practices (ASX Guidelines,

Studies reveal the significance of audit committee effectiveness. For example, in companies with audit committees, there is likely to be less overstatement of earnings (DeFond and Jiambalvo, 1991); and companies with audit committees are less likely to commit financial fraud (Dechow et al., 1996). The audit committee must be effective in performing the tasks assigned to it (Kaplan et al., 2009; Harrast and Olsen, 2007). It is, however, instructive to note that the existence of an audit committee alone does not necessarily guarantee the efficiency of the monitoring and the reliability of the financial reporting processes (see He et al., 2007; Davidson et al., 2005; Forker, 1992). In order for an audit committee to be effective a number of attributes are expected. These include, but not limited to the independence, the presence of at least one member with financial expertise, diligence with which members meet in meetings and the size of the audit committee (Zaman et al., 2011; Vafeas and Waeglelein, 2007; Itonen et al., 2007; Abbott et al., 2003; Carcello et al., 2002). This section ensues to discuss the attributes of the audit committee in reference to the ASX guidelines 2003.

4.3.2.7 Independent Audit Committee

The independence of audit committees is needed and a response to effective monitoring needs (Piot, 2004). The majority of members on an independent audit committee are non-executive and the chairman of the committee should not be the CEO, as recommended by many corporate governance codes and guidelines (see SOX Act, 2002;
the ASX Recommendations, 2003, 2010). Audit committees should be independent from management so that they can effectively monitor executive behaviour. As part of their monitoring responsibilities, audit committees aim to increase the integrity of the financial auditing process (Klein, 2002a) and the quality of financial reporting (McMullen, 1994). It is also posited that independent audit committees have the ability to ameliorate management’s manipulation of the financial reporting process (Klein, 2002b). Consequently, many corporate governance guidelines and codes (see SOX Act, 2002; ASX Recommendations, 2003, 2010) recommend public companies should establish independent audit committees to help deter management from manipulating financial statements and to enhance the quality and integrity of financial reporting.

Empirical evidence generally adduces that independent audit committees have a positive impact on the activities of the board and ultimately, enhance corporate governance (Goh (2009; Xie et al., 2003; Carcello and Neal, 2000). Not only does the independent audit committee enhance the monitoring role of the board but also shareholders are likely to perceive such a committee as efficient monitors of the financial reporting process (e.g. Abbott et al., 2002). Independent audit committees may prevent fraudulent financial reporting such as earnings management (Persons, 2009; Peasnell et al., 2005; Klein, 2002). In effect effective monitoring reduces incidence of management engaging in self-seeking interest including expropriating companies’ resources. This study acknowledges the flexibility allowed in the formation of audit committees in Australian firms and therefore high level of variations in the structure of audit committee may exist. Nonetheless, independent audit committees increase the efficiency of board of directors and ultimately corporate governance. Studies have commented on the importance of the independence of the board, and by extension audit committees as an effective governance mechanism that limits managerial rent-seeking by designing executive
compensation practices (Ben-Amar, and Zeghal, 2011). Hence, this study posits that a highly independent audit committee impacts negatively on executive compensation.

4.3.2.8 Audit Committee Expertise

The efficiency of the audit committee can be identified not only by its independence but also its expertise (Xie et al., 2003). Financial expertise on the audit committee is seen as a corporate governance attribute which enhances monitoring and contributes to the integrity of the financial reporting process. The sophistication and complexities of the financial reporting process and its interpretations require expert financial knowledge. The abridge meaning of financial expertise is individuals being literate in or having knowledge or experience in finance, accounting or in other related fields arising from certification or past employment (PricewaterhouseCoopers, 2000a; Sarbanes-Oxley Act, 2002). The intention to monitor and prevent executives’ self-interest behaviour is not enough unless it is backed by aptitude or capacity to undertake such a task. Not only does the existence of financial experts on audit committees enable strict monitoring and awareness of loopholes in the operations of companies, it also enhances the understanding of auditor-management concerns or even disputes and provide solutions to them (Bedard and Paquette, 2008; Cohen et al., 2004; DeZoort and Salterio, 2001). This improves the corporate governance structure and provides assurance to the shareholders on the reliability of reported earnings.

Consequently, financial experts are trained and competent in dealing with accounting manipulations and are associated with the information content of accounting earnings (Bryan et al., 2004). Financial expertise enables directors to detect and prevent problems in financial reporting (Abbott et al., 2002; DeZoort and Salterio, 2001). It can therefore be argued that audit committee members with financial expertise are likely to detect
opportunistic manipulation. For example, audit committees with at least one member who has financial expertise can detect and prevent earnings management and financial misstatements (see Xie et al., 2003; Chtourou et al., 2001; McMullen and Randghun, 1996). Consequently, deducing from the above discourse, highly competent audit committees are expected to provide efficient monitoring and improve the quality of corporate governance structure.

4.3.2.9 Audit Committee Diligence

Audit committees are able to effectively monitor and prevent executives’ opportunistic behaviour if in addition to independence and financial expertise they are diligent. Diligence is an attribute that is important for board effectiveness and therefore by extension, important to effective monitoring by audit committees (Greco, 2011; Sharma et al., 2009; Laksmana, 2008; Turley and Zaman, 2007). Undeniably, diligence may embrace many components such as preparation before meetings, attentiveness and participation during meetings and follow-ups. However, the extant literature on audit committees uses frequency of meetings per year as the widely-accepted proxy for audit committee diligence (see Barua et al., 2010; Mendez and Garcia, 2007; Raghunandan and Rama, 2007; Abbott, Parker and Peters 2004; Song and Windram, 2004; Abbott, Parker, Peters and Raghunandan 2003). The reason is that frequency of meetings generally indicates audit committee is being diligent (Carcello et al., 2002; Abbott and Parker, 2000).

Other studies support the contention that having more audit committee meetings means minimising earnings management practices (Saleh et al., 2007). The establishment of the audit committee helps to ensure continuous communication between the board of directors, internal auditor and external auditor (Rahman and Ali, 2006). Audit committee meeting is a mechanism where the audit committee shows its commitment and devotion
to the firm. Though there is no minimum requirement regarding the number of audit committee meetings, the more meetings, and the better. For example, the American Bar Association (1978, p. 44) recommends two or more while Abbott et al. (2002) maintain that four audit committee meetings a year may reduce the risk of financial statement fraud.

The extant literature posits that audit committees that meet more frequently signals diligence in reviewing the financial reporting process and are more likely to demand high quality of performance from management (see Zaman et al., 2011; the ASX Recommendations, 2003). Arguments abound that an audit committee that meets regularly exhibits diligent monitoring over senior executives and make it more difficult for CEOs to successfully engage in manipulative behaviour (Gendron and Bedard, 2006; De Zoort, Hermanson, Archambeault and Reed, 2002; Goodwin, Abbott and Parker, 2000; Vafaes, 1999). As financial reporting and accounting practices become more complex, the audit committee can devote more quality time to resolve issues.

The number of audit committee meetings per year will largely depend on the size and complexity of the audit committee's responsibilities (Chen et al., 2009), and the frequency of meetings should be sufficient to enable it to effectively discharge its responsibilities. A number of corporate governance guidelines worldwide make recommendations for audit committees to meet as often as necessary (ASX CGC, 2003; 2007; Sarbanes-Oxley Act, 2002; NYSE Corporate Governance Rules; NASDAQ Corporate Governance Rule). It is not uncommon for audit committees to meet between two to four times a year (see AICD, 2007; Psaros and Seamer, 2004; Abbott and Parker, 2000).
Some studies’ results contradict the general expectation that frequency of meetings prevents self-interest behaviour of management. For example, there was no evidence that more audit committee meetings is associated with smaller discretionary accruals (Rahman and Ali, 2006; Saleh, Iskandar and Rahmat, 2007). Again, there was no significant relationship between the frequency of audit committee meetings and earnings management (Bédard et al., 2004; Davidson et al., 2005). Firth et al. (2007), however, find that the number of meetings has no significant impact on earnings response coefficients, discretionary accruals and audit opinion. It is nonetheless argued that frequency of meetings shows evidence of greater transparency about executive compensation practices (Laksmana, 2008). Abbott, Parker and Peters (2004) also report a negative association between frequency of audit committee meetings and the incidence of financial misstatement. It is suggested that more frequent audit committee meetings lead to effective monitoring and a decrease in self-interest behaviour of executives. This current study proposes that an audit committee that meets frequently is diligent and thereby improves the quality of corporate governance.

4.3.2.10 Size of Audit Committee

It is widely held that an audit committee is likely to have members from diverse backgrounds with differing and broad financial expertise and experiences if it is large (Choi, Jeon and Park, 2004). Such a committee is likely to encompass expertise not only from finance and accounting fields but also from industry and other fields (Zaman et al., 2011; Cohen et al., 2007; Archambeault and De Zoort, 2001). An audit committee with varied expertise relevant to the entity’s responsibilities performs more intense scrutiny and exercises control over the activities of the organisation (Bedard, Chtourou and Courteau, 2004).
There is not, however, an agreed number of members that can form an audit committee, instead as a guide, a recommendation of a minimum of three is made (e.g. BRC, 1999; ASX CGC, 2003; 2007). This minimum number of three can prevent manipulation from management and also provide the necessary strength and diversity of expertise and views to ensure appropriate monitoring (Bedard, Chtourou and Courteau, 2004). A larger audit committee which provides access to greater resources and managerial talent may have enormous benefits for the entity. It is also claimed that a larger audit committee may also be used as a proxy to make available more resources to improve the quality of financial reports (DeFond and Francis, 2005).

Like the size of the board of directors, a larger audit committee may encounter functional challenges, create process losses and diffusion of responsibility and thereby render it ineffective (Karamanou and Vafeas, 2005; Vafeas, 1999). Additionally, an ineffective audit committee as a result of having many experts leads to different opinions, thus requiring more frequent meetings which may increase organisational costs. Notwithstanding the disadvantages of larger audit committees, there are benefits. Undoubtedly, larger audit committees with an appropriate mix of expertise, skills, talents and experience may serve to enhance the analysis and review processes to provide financial reporting quality (Felo et al., 2003). It can also enhance more effective monitoring and in that sense, demand for frequent meetings may decline (Sharma et al., 2009).

4.3.2.11 Remuneration Committees

The boards of directors, conventionally, conduct their work through either the full board or delegate their authority to standing committees (Laux and Laux, 2006; American Bar Association’s Corporate Director’s Guidebook, 1994; Kesner, 1988; Vance, 1983).
These committees are normally subsets of board members and hence, undertake detailed work on an assignment, make recommendations and report to the full board (Pearce and Zahra, 1991). The boards delegate to remuneration committee the function of establishing a formal and transparent procedure policy and structure for all forms of remuneration paid to directors and senior management. The committee responsible for this role is the compensation committee (remuneration committee, use interchangeably). It is through these committees that directors determine the appropriate design of reward structures for management and align agents’ and principals’ interests (Conyon and Peck, 1998).

Most corporate governance codes (Greenbury Committee Report, 1995) and practices (Swiss Code of Best Practice in Corporate Governance, 2002) recommend most members on compensation committees be independent of management. This is to provide control over management’s self-serving decisions on compensation for the benefit of all stakeholders (Cheng & Firth, 2005). Aside from acting as a monitoring mechanism, independent non-executive directors on remuneration committees are unlikely to grant excessive compensation (Basu et al., 2007). Providing generous pay packages may draw public criticism and therefore independent non-executive directors may want to protect their reputations (Schildknecht, 2004; Pollock et al., 2002). It is argued that the possible exclusion of the CEO from the remuneration committee (as is done in the USA, according to Bebchuk and Fried, 2004) may enhance establishing proper compensation packages (Andjelkovic et al., 2002; Daily et al., 1998).

The extant literature produces mixed evidence on the ability of remuneration committees to reduce compensation (Conyon and Peck, 1998; Ezzamel and Watson, 1998). The determinants attributed to the differences are whether the CEO sits on the committee,
whether non-independent directors dominate the committee or even whether the chair of the committee was appointed during the term of the CEO (see Bertrand and Mullainathan, 2001; Main et al., 1995). These reasons form the bases for results of either “no significant” or “less significant” positive or negative significant impact on compensation with the presence of a remuneration committee (see Anderson and Bizjak, 2003; Newman and Mozes; 1999; Shivdasani and Yermack, 1999; Conyon and Peck, 1998; Daily et al., 1998; Crystal, 1991).

Proponents of agency theory are in favour of remuneration committees’ ability to design appropriate compensation structure to align the interests of management and shareholders (Uzun et al., 2004; Conyon and He, 2004). They posit that the absence of such committees creates an opportunity for senior executives to extract resources from companies in the form of pay packages. It is also established that companies with remuneration committees are identified with lower growth rates in executives’ cash compensation (Conyon, 1997).

Despite the theoretical support for remuneration committees, there is also evidence to the effect that the existence of remuneration committees increases the levels of executive compensation (Main and Johnston, 1993; Conyon and Peck, 1998). This is because CEOs can influence such committees. It is also argued that even where the board relies on external remuneration consultant to determine the compensation structure, CEOs may influence their decision for optimised contract against the firm because they appoint them (Crystal, 1991). While it is noted that there can be no significant impact on executive compensation even when a compensation committee exists (Johnston, 2002), it can be argued that an effective remuneration committee will design appropriate remuneration packages.
It is therefore necessary to establish an efficient remuneration committee which is characterised by majority independent and expert directors (Sapp, 2008; ASX Corporate Governance Council, 2007). The UK reports and Codes on Corporate Governance and the recent US regulations move a step further to essentially prohibit executive directors from serving on a firm’s compensation committee. This is because members who are independent of management are more unlikely to construct remuneration packages solely in the interest of the CEO. Hence, there is a direct as well as an indirect relationship between the remuneration committee and executive compensation (Anderson and Bizjak, 2000; Newman, 1999). Therefore, it is expected that a remuneration committee with more independence and expertise can influence CEO compensation in a more subtle way.

**4.3.2.12 Nomination Committee**

The nomination committee acts as another subcommittee of the board of directors and is focused on evaluating the board of directors of its respective firm and on examining the skills and characteristics that are needed in board candidates. The nomination committee will often identify suitable candidates for various director positions. Other responsibilities may include reviewing and changing corporate governance policies. The committee is often comprised of the chairman of the board, the deputy chairman, and the chief executive officer. The exact number of members on each committee tends to differ depending on the organisation. The presence of not just the nomination committee but independent nomination committee is important for board effectiveness and monitoring ability (Klein, 1998, 2000, 2002b). It takes away CEOs’ power in nominating new directors. This role played by the nominating committee ensures that CEOs do not nominate favourites to committees in order to influence them, thereby reducing CEO power. As best practice, a nomination committee must comprise a majority of non-
executive directors (Cadbury committee, 1992; p. 27). The existence of the independent nomination committee improves the quality of corporate governance (Peasnell et al., 2000a).

The preceding attributes of board of directors and subcommittees as discussed previously enhance the quality of corporate governance systems and can effectively restrain earnings management and prevent expropriation of corporate resources (compensation) by executives. It must be re-emphasised that these attributes are not tested individually but these characteristics form the basis of developing a corporate governance index (score) for the study with which all sample companies will be measured against. Chapter 5 describes in detail the construction of the corporate governance index.

4.3.3 Joint Effect of the GFC and Corporate Governance on the Relationship between CEO Compensation and Earnings Management

Research Question 3 is designed to reveal the potential of joint effect of the GFC and corporate governance on the relationship between CEO compensation and earnings management. This study argues that during severe financial downturn management is likely to artificially increase its performance using accounting manipulations until the economy recovers. The motivation is that during recessionary phases of the economic cycle, it is more difficult to meet targets and companies are more likely to become vulnerable (Choi, Kim, and Lee, 2011). However, managers want to insulate themselves from lost compensation as a result of weak performance. Therefore, management may have the incentive to manipulate earnings.
This may explain why notwithstanding the challenges of the GFC when performance was generally down, some managers were able to enjoy increased bonus compensation. It is also argued that corporate governance mechanisms restrain managers’ harmful behaviour. It is therefore appropriate to examine the effectiveness of corporate governance structures in reducing the negative effect of earnings management on CEOs compensation during the crisis period. These assumptions discussed above set the context for examining the third research question, which concerns the joint effect of the GFC and corporate governance on the relationship between CEO compensation and earnings management. The following sets of hypotheses are developed in relation to the third research question.

This study argues that the Pre-GFC period represents a period of growth and therefore, this study conjectures that corporations experience relatively, lower levels of earnings management during economic growth because there is no pressure on management to achieve a pre-set target. Conversely, management may have strong incentives during the crisis period to manipulate earnings to influence compensation. Consequently, the relationship between CEO compensation and earnings management is weaker in the Pre-GFC than the Crisis period. Again, the increase in scrutiny and monitoring after the crisis help restrain earnings and therefore, the relationship between CEO compensation and earnings management is likely to be weaker than the Crisis period. The relationship between CEO compensation and earnings management during the Post-Crisis period may not be significantly different from the Pre-GFC. This study argues that the relationship may weaken from the crisis period. This may be due to two reasons. First, the pressure from the monitoring system after the GFC is likely to decrease earnings management, effectively keeping the relationship weaker than the crisis period. Second, it is assumed that economic stability and growth will characterise Post-GFC. However,
how different the relationship in Post-Crisis will be from the Pre-Crisis period is an empirical question. This study therefore, contextually examines the variation in the relationship between CEO compensation and earnings management and how jointly, GFC and corporate governance influence the relationship. The following hypotheses are formulated to test this argument.

\textit{H3a-c: The relationship between CEO compensation and earnings management for SCG firms is significantly weaker than WCG firms during the crisis period}

\textit{H3d-f: The relationship between CEO compensation and earnings management for SCG firms is significantly weaker than WCG firms in the Post-crisis period}

\textit{H3g-i: There is a stronger (weaker) relationship between CEO compensation and earnings management for WCG (SCG) during the Pre-GFC.}

The diagram below summarises the hypotheses stated above.
4.4. Control Variables

Literature on executive compensation has identified a number of variables that influence compensation, for example, tenure (Milbourn, 2003), age of CEO (Gibbons and Murphy, 1992 Bognanno, 2001) and company performance (Gregg et al., 2005). However, this study will not emphasise heavily the control variables for two reasons. First, it is not possible to use every single one of them in this study since not all variables can be included in a model (see Bryan et al., 2000; Yermack, 1995). Second, the focus of this study is on the change of the relationship but not on the determinants of compensations or the effects of the variables on compensations. This study, however, acknowledges the importance to control for some variables that are commonly associated with executive compensation and earnings management. Consequently, the study incorporates three control variables that can possibly influence the dependant variable (executive compensation): size of the firm, leverage and return on assets as a measure of firm performance. This study will, however, not formulate hypotheses for each of the control variables but rather discuss their relationship.

4.4.1 Size

Size has been one of the consistent variables proven to have an association with executive compensation (Watts and Zimmerman, 1990). It is considered a unique variable that may be the embodiment of all the complexities of the CEO’s job. It may compensate for all the effects of other excluded variables, which are highly correlated with firm size (Tosi et al., 2000). A number of studies posit that firm size is a major determinant of various measures of CEO compensation mix (see Harm and Raible, 2008; Barron and Waddell, 2003; Ang et al., 2002; Ryan and Wiggins, 2001; Daily et al., 1998). However, the reasons for this relationship are diverse (Gomez-Mejia and Wiseman, 1997). Most of these studies posit a positive relationship between large firms
and compensation. An obvious reason attributed to this position is the increased ability for large firms to pay (O'Reilly et al., 1988). Large firms have the ability to hire better qualified CEOs for their higher managerial skills. The compensation for such CEOs is market-driven and consequently highly competitive (Becker, 1981).

Large firms with growth opportunities are considered risky to operate. They reflect the operational complexities of both job and firm. Larger firms naturally become more structurally complex to manage. Larger firms are identified with different and specialised subunits, cultural diversity in which there are varied human resources practices, financial reporting systems, public interest and exposure to international markets that are more complex. This therefore, requires high quality managers but high quality executives must be well compensated for their efforts (Chalmers, Koh and Stapledon, 2006; Gomez-Mejia and Wiseman, 1997; Ungson and Steers, 1984). This study, therefore, expects a positive relationship between firm size and compensation.

4.4.2 Leverage

The ability of leverage as a corporate governance device to reduce agency conflict cannot be over emphasised (Faccio, Langand Young, 2001). Leverage refers to the company's ratio of total debt to total assets. Leverage is expected to play an important role in executive compensation in relation to potential agency costs of debt (Iyengar et al., 2005). Debt reduces the cash flow available for spending at the discretion of managers (Jensen, 1986). Consequently, as leverage increases, so does the risk of default by the firm. It may also indicate that the firm requires more monitoring from shareholders because its equity is eroding. As a result, both owners and lenders have strong incentives to monitor, which is a substitute device for monitoring firm management. This monitoring encourages management to use cash efficiently (see
Keasey, Thompson, and Wright, 1997; Williamson, 1988; Jensen, 1986) and, therefore, leverage may have a negative relationship with compensation (Bryan et al., 2000). This current study expects an inverse relationship between leverage and compensation.

4.4.3 Return on Assets (ROA)

The accounting profitability of return on assets (ROA) is considered highly important in determining executive compensation (Jensen and Murphy, 1990; Ely, 1991). However, studies on this relationship have only produced mixed results (Tosi, Werner, Katz & Gomez-Mejia, 2000). For example, Mehran (1995) finds that ROA is inversely related to the percentage of CEOs’ total cash compensation. Although, Leone et al. (2006) find that there is no change in CEO pay to changes in ROA based on positive and negative stock returns. On the other hand, other studies posit that a strong correlation between CEO compensation and ROA exist and that changes in CEO cash compensation is significantly and positively correlated with changes in ROA (Antle and Smith, 1986; Shawn and Zhang, 2010). It is important to also acknowledge that rewarding cash bonuses to executives based on accounting performance such as ROA may motivate executives to manipulate the timing of revenues and expenses, therefore, resulting in undesired behaviour (Sigler, 2011). This study therefore, expects a positive relationship between return on assets and compensation.

4.5 Conclusion

In summary, this chapter has developed the various hypotheses that need to be tested in response to the research questions. The process of developing these hypotheses involved the examination of various factors, assumptions and theories relating to executive compensation. The proposition of this study, however, incorporates the contention that executives are self-seeking and given the chance will manipulate earnings to increase their compensation. Moreover, the study assumes that economic downturn such as the
GFC is an incentive for executives to manage earnings to meet earnings forecast so as to influence their compensation. This action reflects the deviation of managers’ interests from those of shareholders. However, the existence of quality corporate governance motivates managers to maximise firm value instead of pursuing their own private objectives. Corporate governance structure can effectively restrict expropriation by executive compensation. The next chapter explains variable descriptive characteristics and the method used to test these hypotheses.
CHAPTER 5

Research Methodology and Modelling

5.1 Introduction

This chapter describes the research methodology to test the hypotheses developed in the previous chapter. While the quality of the findings of a research project depends on the suitability of the methodology and the quality of the data collected, the use of a particular methodology is determined by the resources available to the researcher, the scope, purpose and intended audience of the research. Consequently, this chapter describes the rationale for selecting the variables and explains in detail their measurements and the methods used in collecting the data. Furthermore, it provides an econometric description to examine the effect of the Global Financial Crisis on the relationship between CEO compensation and earnings management and the role played by corporate governance.

This study, adopts a systematic process of collecting, collating, and analysing information to better the understanding of the phenomenon under review. In light of the above, the study shows a clear progression from choice of methodology and procedures to the data collected and from statistical tests to findings and, ultimately, conclusions. Section 5.2 justifies the research methodology. Section 5.3 outlines in detail the data issues, including the sample, data collection and techniques. Section 5.4 describes the operational definitions of variables (dependent, independent and control variables), measurement of variables. Section 5.5 outlines the appropriate statistical tools used in arriving at the results. Section 5.6 then summarises the chapter.
5.2 Justification of the Research Methodology

This study adopts the quantitative method approach and primarily uses archival data in the form of company annual reports. The archival and content analysis of the companies’ documents involves the extraction of data in quantitative form that is subject to rigorous quantitative analysis in a formal and rigid fashion (see Rubin and Babbie, 1993). The information extracted is then quantified into numerical values, processed through the use of multivariate analysis techniques, and then yields to interpretations (Rubin and Babbie, 1993). This process is done in a systematic and replicable manner to achieve objectivity and reality (see Stemler, 2001; Weber, 1985). Information on executive compensation, the board structure, audit committees, financial information and company characteristics is collected.

5.3 Data Issues

This study considers important issues relating to data because the quality of data collected is just as important as the procedures taken to arrive at the findings (see Gill and Johnson, 2000). The reliability and accuracy of data used in research analysis significantly determines the validity of the results (Selvanathan, Selvanathan, Keller and Warrack, 2000). Consequently, this section appraises a series of closely related activities that are essential to effectively carry out the research. The activities deal with the relevance of the data, the data to collect, the sampling process and sample size and methods of collecting data.

5.3.1 Sources of Data and Collection

This study utilises secondary data (annual reports) because they are appropriate, convenient, relatively inexpensive to obtain and reliable. The study obtained company data (annual reports) from the Aspect Huntley DatAnalysis, FinAnalysis and OSIRIS
databases in addition to the corporate websites. This is done to verify the objectivity and systematic nature of the data collection process. The financial and accounting figures for earnings management are derived from these sources. Though the CEO compensation and corporate governance data were manually obtained from the annual reports, the compensation figures downloaded from Connec4 database are used to validate it. This was to cross-check any missing figures issued during the process of manual collection. It was also done to ensure consistency and further enhance the quality of the data. The corporate governance variables, board characteristics, and audit committee attributes were hand-collected from the annual reports.

5.3.2 Study Sampling Procedures and the Sample

The starting point for the sample is the population of all publicly traded firms on the Australian Stock Exchange (ASX) with annual accounting and compensation data covering the period from 2005 to 2010. The intersection of the databases yields a population of 1,810 listed firms with an expected firm year observations of 10,860 (1,810*6 years) as at the end of 2010. These firms cut across all industries on the ASX. One major criterion for the sample firms is its balanced panel nature; only firms whose annual reports are available for at least 6 consecutive years in the periods 2005-2010. However, to be included in the sample, a company must not only satisfy the data availability requirement but also meet a number of restrictions this study imposes. The following are the summary of these restrictions:

1. This study requires the availability of CEO compensation data for the entire period to ensure sample homogeneity; hence, firms with missing CEO compensation data are deleted.
2. Firms with missing data needed to calculate earnings management and control variables are excluded. This ensures the number of firm-years in the sample is consistent across time.

3. Financial firms are eliminated due to having special characteristics and the fundamental differences in reporting requirements.

4. Firms with multiple CEOs during the period were also eliminated. The compensation of an outgoing CEO may include some departing payment while the incoming CEO may receive a sign-on payment which may not be reported separately and may affect the measurement (Matolcsy and Wright, 2007; Coulton and Taylor, 2002).

Only those companies which conform to the selection criteria have been used in the analysis. This sampling criteria process yields a total of 300 firms, and 1,800 firm-year observations. Table 5.1 describes the sample selection procedures of the study.
Table 5.1
Selection of Sample Companies

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
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<tbody>
<tr>
<td>ASX Population as per intersection of databases as at 20101810</td>
<td></td>
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<tr>
<td>Less: General financial firms</td>
<td>224</td>
</tr>
<tr>
<td>Banks</td>
<td>32</td>
</tr>
<tr>
<td>Equity and Non-Equity investment instruments</td>
<td>242</td>
</tr>
<tr>
<td>Insurance (life and non-life firms)</td>
<td>61</td>
</tr>
<tr>
<td>Real estate</td>
<td>284</td>
</tr>
<tr>
<td>Firms with multiple CEOs during the period</td>
<td>158</td>
</tr>
<tr>
<td>Suspended Trading</td>
<td>35</td>
</tr>
<tr>
<td>Non-availability of or missing data (financial and compensation)</td>
<td>467</td>
</tr>
<tr>
<td>Firms reporting in foreign currency</td>
<td>4</td>
</tr>
<tr>
<td>Firms change reporting year end date</td>
<td>3</td>
</tr>
<tr>
<td>Total deductions</td>
<td>1,510</td>
</tr>
</tbody>
</table>

Sample Total (Firms)                                           300

Final number of observations (300*6)                           1,800

5.3.3 Sub-sample

Separating firms into two groups based on the strength of corporate governance makes it possible to investigate the effect of corporate governance on the earnings management and CEO compensation relationship. This study develops a Corporate Governance Index (Score) and divides the total firms’ sample (300) into two sub-groups based on the value of corporate governance index score obtained. The construction of the index score for each firm is discussed in detail in Section 5.4.4.2.
5.4 Variable Description and Measurement

In this section issues relating to the definition and the measurement of the main variables, in other words the level of CEO compensation, discretionary accruals, size, and return on assets, leverage and the proxies used for these variables, are discussed. Measures are also documented for the strength of corporate governance and the elements used to construct corporate governance index. This includes the characteristics of board of directors audit committees, remuneration committees and nominating committees which are also discussed.

5.4.1 Dependent Variable - CEO Compensation

The dependent variable in this study is the CEO compensation which is limited to the direct compensation awarded by the firm and received by the CEO in the fiscal year. The executive compensation literature generally distinguishes between the different compensation elements according to the nature of each component and/or by the time-horizon of any award. The components are measured separately rather than simply relying on a measure of total compensation. This is because each component is influenced by a variety of factors (Chalmers et al., 2006). The terminologies that are used in identifying compensation components are not always consistent and therefore, create difficulties when classifying and measuring them. For example, while some firms use the term “short-term incentive” others use “bonus”. Appendix 5.1 describes the various components of compensation and the terminology that is used in the literature. However, extensively investigating or discussing the different measurements of compensation components is beyond the scope of this study.

Executive compensation may be classified into cash or short term compensation and non-cash or long term compensation in order, to empirically examine how the nature of
compensation may affect management behaviour. The compensation components measured in this study are salary, cash compensation and total compensation. Despite the importance of long-term incentives (Equity, Options, and Shares) in executive contracting, this study does not include long-term incentives in its investigation. The reasons are: first, there is a great deal of uncertainty about how to measure incentives and how firms determine optimal incentive levels; and second, reporting and disclosure of long-term incentives by Australian companies are ambiguous and the valuation is more problematic (Matolcsy and Wright, 2007). Consequently, this study emphasises cash compensation (fixed salary and annual bonus). The reason is that generally, bonus compensation is tied to accounting measurement, and therefore may be subject to managerial manipulation which is the basic assumption of this study. Bonus compensation is a percentage of fixed compensation and hence, fixed compensation is also examined here.

Following prior literature, this study uses three measures of compensation: (i) total (aggregate level) compensation (TCOM) which includes salary, bonus and total value of all other payouts, (ii) total fixed compensation (FCOM) which includes basic salary and superannuation, and (iii) bonus which includes all payment tied to earnings except the equity components. The difference between total compensation and total cash compensation (TCOM-FCOM and BCOM) is meant to capture all other payments of total compensation termed as Other Compensation (OCOM). This study measures all components of compensation at their dollar value as reported in the annual reports. However, to eliminate how much of the growth is attributed to natural results, the study uses real compensation. Real compensations is the nominal compensation adjusted for inflation (see Appendix B for inflation figures as reported by the Australian Bureau of Statistics). These are mainly used for descriptive statistics. However, for the regression
and other statistical purposes, compensation is measured with natural log to reduce heteroscedasticity.

5.4.2 Independent (Test) Variables

This study utilises earnings management as the independent/test variable. The proxy for earnings management is the discretionary accruals. It is argued in the literature and subsequently, as discussed previously in this study, a cash bonus plan is directly linked to accounting earnings and therefore, creates opportunities for executives to engage in accounting choices (which are subject to managerial manipulation) leading to earnings management (see Guidry et al., 1999; Holthausen et al., 1995; Healy, 1985; Watts and Zimmerman, 1978). Managers could manage earnings by choosing accounting policies, accruals, and/or real economic decisions.

It can thus be argued that executives would benefit from income-increasing manipulations when such manipulations aid in the transfer of wealth to managers through higher bonuses. Nevertheless, this study also acknowledges that some accounting choices and estimates may be used to signal private information. This study argues that changes in earnings management may cause a change in accounting earnings-linked-compensation. Evidence suggests that it is more costly for managers to transfer earnings between periods by changing accounting procedures than by changing accruals. One advantage of using accruals to manage earnings is that it is difficult and costly for users to unravel accounting numbers in order to make economic decisions (Healy, 1985). Therefore, accruals are more likely to be used by managers to manage earnings than structuring actual transaction and consequently, this study uses accruals to capture earnings management behaviour.
5.4.2.1 Measurement of Earnings Management

An important aspect of earnings management research is how to measure the unobservable management discretion with the estimate of discretionary accruals as proxy for earnings management. The extant literature identifies two approaches of accrual measurement with varied objectives (Peasnell et al., 2000b). First, the single accrual approach that focuses on a specific or single accounting item/transaction. Consequently, such measurement ignores other contemporaneous accounting choices and leads to low power test. The second approach is the total accrual approach which includes multiple accounting items or transaction (Klein, 2002; Xie et al., 2003). This study, however, does not focus on specific one time transaction and therefore, it is appropriate to use discretionary accruals that proxies for the aggregate effect of accounting choices. Following previous studies, this study computes the absolute value of discretionary accruals (DACC) and uses it as the proxy for earnings management.

There are two assumptions underpinning the choice of proxy for this study. First, the focus of this study is to measure the magnitude and not the direction of earnings management, and therefore the study uses the absolute value proxy to capture the combined effect of income-increasing and income-decreasing earnings management. Second, this study employs a continuous variable rather than indicator variable because the study is interested in the relationship between the extent and magnitude of the earnings management and CEO compensation. In determining earnings management, the study adopts the Modified Jones Model (Dechow et al., 1995) which is stronger than the Jones (1991) model. This is due to its ability to measure earnings management with less error in the presence of sales manipulations (through credit sales recognition). This overcomes the limitation of the Jones (1991) model that total revenue is non-discretionary (Holthausen et al., 1995).
The modified Jones model takes place in two stages, the estimation of total accruals and then the estimation of the actual discretionary accruals and non-discretionary accruals (NDA) (Healy, 1985; Jones, 1991). Total accruals are calculated directly from the statement of cash flows to avoid measurement error (Hribar and Collins, 2002). Consistent with other analyses (Bowen et al., 1986; DeFond and Jiambalvo, 1994), this study defines total accruals as the difference between earnings and cash flows from operations (DeAngelo, 1988) and is calculated as follows:

\[
\frac{TA_{it}}{A_{it-1}} = \frac{EARN_{it} - OCF_{it}}{A_{it-1}}
\]

EQ (1)

Where: TA is total accruals for firm i in period t; EARN is the income before tax and extraordinary items for the firm i in period t; OCF is the operating cash flow for the firm i in period t; and A_{it-1} is the total assets for the firm i in year t-1 (Lagged year). Consistent with the prior literature, all variables employed are scaled by lagged assets to mitigate the effect of heteroscedasticity.

Prior research often partitions total accruals into discretionary accruals (DAC) which results from managerial discretion and those that are not, non-discretionary (NDAC). The second step in the process is therefore, to compute non-discretionary accruals (NDA) during the event period (Dechow et al., 1995). NDA is approximated and will be used when determining the actual NDA (Bergstresser and Philippon, 2006; Jones, 1991) as follows:

\[
NDA_{t} = \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 (\Delta REV_t - \Delta AR_t) + \alpha_3 (PP_{E_t})
\]

EQ (2)

Where: NDA_{t} is Non-Discretionary Accruals in year t; A_{t-1} is Assets in year t-1; ΔREV_{t} is changes in revenue in year t; ΔAR_{t} is the changes in accounts receivables in year t; and
PPE\textsubscript{t} is Property, Plant and Equipment in year \textit{t}; and $\alpha_{1i}$, $\alpha_{2i}$, $\alpha_{3i}$ are firm specific parameters.

This study uses the absolute value of the firm’s discretionary accruals as proxy for earnings management (see Bergstresser and Philippon 2006; Kim and Yi, 2006; Frankel et al., 2002; Warfield et al., 1995). Discretionary accruals (DACC) are defined as the difference between total accruals (TACC) deflated by lagged assets and non-discretionary accruals (NDA). DACC is determined as follows:

$$DACC_{it} = \left| TACC_{it} - NDA_{it} \right|$$

EQ (3)

Where: DACC is discretionary accruals, TACC is the total accruals deflated by lagged assets and NDA is the non-discretionary accruals.

5.4.3 Control Variables

In order to minimise the problem of potential omitted variables, the study includes a number of controls in the equation. Prior research in both compensation and earnings management suggests a number of variables that may influence executive compensation. This study, in line with others (see Lin, Kuo and Wang, 2013; Bergstresser and Philippon, 2006; Kim and Yi, 2006; Frankel et al., 2002; Warfield et al., 1995) includes firm size, leverage and return on assets as variables related to compensation and therefore, control for them.

The inclusion of the firm size variable is consistent with previous research (Conyon and Murphy, 2000) which posits the significant effect of size on the level of executive compensation. It is claimed that size reflects the operational complexity of the firm and the firm’s ability to award higher compensation (Jensen and Murphy, 1990; Firth et al., 1996; Conyon, 1997; Conyon and Murphy, 2000). Economic theory predicts that larger
firms are more difficult to manage and will demand more talented CEOs and consequently, when the average firm is larger, executive pay is higher (Gabaix and Landier, 2008). Previous studies used different proxies for firm size such as total assets, sales, and number of employees. In this study, firm size (SIZE) is measured as the natural logarithm of total assets at the year-end as has been the case in many earlier studies (see Wang et al., 2011; Chalmers et al., 2006; Cyert et al., 2002; Talmor and Wallace, 2000; Mehran, 1995).

Leverage is included in the equation as a control variable for its ability to affect compensation. Leverage is claimed to affect the design of managerial compensation through agency costs. It is further argued that pay-performance is sensitive to the level of leverage of a firm (see Ortiz-Molina, 2007; Bryan, Nash and Patel, 2006; John and John, 1993; Jensen and Murphy, 1990a). It is even claimed that both leverage and executive compensation are important causes of the last global financial crisis in 2008 (see Lin, Kuo and Wang, 2013). Leverage is measured as total long-term debt divided by total assets.

The extant literature posits a strong relationship between executive compensation and company performance (see Merhebi et al., 2006; Rupp and Smith, 2002; Matolcsy, 2000; Murphy, 1985). The majority of these studies claim that firms reward compensation based on the performance of the business and that by tying compensation to performance, managers strive to maximise shareholder value. The pay-performance concept therefore, is designed to reduce agency cost. In this study, Return on Assets (ROA) is used as a proxy for firm performance and is measured as the ratio of earnings before interest and taxes to total assets. Table 5.2 provides the operational definitions of variables used in this study.
Table 5.2

Operational definitions of variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Operational definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCOM</td>
<td>Dollar value of fixed compensation earned by CEO in firm i, at fiscal year t, measured in millions of dollars and deflated by rate of inflation,</td>
</tr>
<tr>
<td>BCOM</td>
<td>Dollar value of bonus compensation earned by CEO in firm i, at fiscal year t, measured in millions of dollars and deflated by rate of inflation,</td>
</tr>
<tr>
<td>TCOM</td>
<td>Dollar value of total compensation earned by CEO in firm i, at fiscal year t, measured in millions of dollars and deflated by rate of inflation,</td>
</tr>
<tr>
<td>DACC</td>
<td>Discretionary accruals measured for firm i at year t, measured by equation (3),</td>
</tr>
<tr>
<td>SIZE</td>
<td>Firm size for firm i for year t, measured by the logarithm of the total assets at year t,</td>
</tr>
<tr>
<td>LEV</td>
<td>Leverage is measured as total long-term debt divided by total assets for firm i in year t,</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on assets, measured as the ratio of earnings before interest and taxes to total assets for firm i at year t,</td>
</tr>
</tbody>
</table>

5.4.4. Moderating Variable - Corporate Governance

The empirical evidence posits that earnings management has a positive relationship with CEO compensation which is harmful and creates the agency problem. However, the effect of earnings management is neutralised by strong corporate governance that negates managerial opportunism (see Ashbaugh et al., 2004; Klein, 2002; Peasnell et al., 2000a; Dechow, Sloan and Sweeney, 1996; Beasley, 1996; Warfield, Wild and Wild, 1995) and effectively restricts compensation expropriation by executives (La Porta et al., 1998). It can be argued that efficient corporate governance moderates the effect of earnings management on executive compensation (Gul and Tsui, 2001) for the benefits
of shareholders. This study argues that a strong corporate governance mechanism can moderate the relationship between compensation and earnings management.

5.4.4.1 Provisions used as Components of Governance Score

The various corporate governance standards and best practices codes give explicit guidelines that depict a quality corporate governance structure (Sarbanes-Oxley Act of 2002; ASX Recommendations, 2003, as amended in 2010). These codes and guidelines identify the various bodies or mechanisms that must be present to ensure quality corporate governance. The codes also recommend the various monitoring and governance characteristics, the role, functions and composition of board of directors and their subcommittees. Consistent with corporate governance best practices guidelines and codes (Sarbanes-Oxley Act of 2002; ASX Recommendations, 2003, as amended in 2010) and prior literature (see Beasley et al., 2009; Cohen et al., 2004; Larcker and Richardson, 2004), this study considers governance characteristics that help resolve agency problems. This study includes in the construction of the index score, specific corporate governance measures such as size, independence and expertise of Board of Directors, Audit, Nomination and Remuneration Committees. These are often interpreted elements that are able to assist in monitoring the executives’ behaviour. This is discussed in Chapter Four.

5.4.4.2 Corporate Governance Index (CGScore)

This study examines the moderating effect of corporate governance that requires the measurement of corporate governance strength. Unlike many studies which typically considers characteristics of corporate governance separately in their analyses, this study, following prior research (see Sivaramakrishnan and Yu, 2008; Core, Guay and Rusticus, 2006; Zhang, 2005; Gompers, Ishii and Metrick, 2003) constructs corporate governance
index score (CGScore) to measure the quality or efficiency of corporate governance. The constructed disclosure index serves as the benchmark because this study focuses on the strength of corporate governance in terms of whether it is strong or weak. The hypotheses can be tested by making intergroup comparisons of the relationship between CEO compensation and earnings management.

The construction of the index score is calculated for each firm and is based on the elements of corporate governance discussed in Chapter Four. This study follows the concept underlying Governance index (G-Index) for measuring corporate governance quality developed by Gompers et al. (2003) and used by many researchers (see Bekiris and Doukakis, 2011; Bowen et al., 2008; Sivaramakrishnan and Yu, 2008; Jiang et al., 2008; Larcker et al., 2007; Brown and Caylor, 2006). Although different numbers of corporate governance attributes were used for each of the studies listed, the ultimate quality and significance of corporate governance depends on the relevance of the attributes chosen for the research. The scoring takes the form of a dichotomous procedure (see Ali et al., 2004; Haniffa and Cooke, 2002; Ahmed and Nicholls, 1994). A measure of corporate governance is created by adding one point for each of the corporate governance principles selected, giving each company its own corporate governance score (Larcker et al., 2007; Gompers et al., 2003; Haniffa and Cooke, 2002). This procedure is employed because the study assumes that no item on the list is more important than others and no group of users is seen as better than other groups. Another important element is the size of the board of directors. As per the argument made in Chapter Four and the prior literature, smaller board size is considered efficient for quality corporate governance. This study, therefore, argues that smaller board sizes are ideal and therefore, firms which have smaller boards are assigned 1 and zero if
otherwise. The smaller boards are the firms with board sizes equal or below the mean of board sizes. This study measures the corporate governance score as follows:

\[ CGScore_{it} = \sum_{i=1}^{nit} d_{it} \]  

EQ (4)

Where: \( CGScore_{it} \) = the corporate governance score for the \( i \) company in the period \( t \) (the \( t \) can adopt any of the three periods (Pre-crisis, During-Crisis and Post-Crisis)

\( n_{it} \) = possible corporate governance score;
\( d_{it} \) = 1, if a possible characteristics is present in the company \( i \) in year \( t \); 0 if otherwise.

Following the creation of the corporate governance index, the study proceeds to rank each firm based on the score received out of the total expected. The sample is then sub-divided into strong or weak. Companies with score equal the median or above are placed in the ‘high score’ sub-groups and are referred to as Strong Corporate Governance (SCG) firms. All the other firms with a scored below the median are placed in “low score” sub-groups referred to as the Weak Corporate Governance (WCG) firms. This study uses the median as a better proxy for the centre value of the sample’s observations of central tendency. Statistically it is suggested that the median is less likely to be affected by outliers or extreme values, as a centre value of the sample’s observations (Greene, 2008).Appendices 5.4 and 5.5 summarise the corporate governance elements and scoring statistics, respectively.

5.4.5 Justification of Global Financial Crisis Periods

This study covers the years from 2005 to 2010; however, these years have been divided into three periods of two years each; 2005-2006, 2007-2008 and 2009-2010. This is because the purpose of the study is to compare the relationship between compensation
and earnings management before, during and after the GFC. Therefore, 2005-2006, 2007-2008 and 2009-2010 represents the pre-GFC, during-GFC and post-GFC, respectively. The pre-GFC, During-GFC and Post-GFC represent economic growth, economic contraction and economic recovery and growth, respectively (see Golub and Crum, 2009; Frydman and Jenter, 2010; Raviv and Landskroner, 2009). These phases in recent economic history are chosen to demonstrate the influences of different economic conditions on the relationship between CEO compensation and earnings management.

The first major reason to begin in 2005 is because the corporate governance recommendations by the ASX Corporate Governance Council which applied for the majority part of the period were released on 31 March 2003 but companies were required to comply from 1 January 2005. Even though these recommendations were not compulsory for all listed companies (only for the S&P/ASX 300), listed companies need to explain any departure of these recommendations. Second, the year 2005 signifies the Post-Corporate Law Economic Reform Program (CLERP 9). CLERP 9 is an Act made by the Australian Parliament in 2004 and it became law on 1 July 2004. The Pre-crisis, During-crisis and post-crisis are represented by P1, P2 and P3, respectively.

5.5 Data Analytical Strategies

This section discusses the strategies and tools of data analysis needed to examine the results of this study. The tools of data analysis involve the development of regression models to test the extent to which regression analysis is used to test hypotheses that focus on the impact of the GFC on the relationship between executive compensation and earnings management and the moderating effect of corporate governance.
5.5.1 Data Analysis Plan

To begin the data analysis process, descriptive statistics were calculated on the independent variables to summarize and describe the nature of the data. Following other studies (e.g., DeFond and Park, 1997; Gul et al., 2000), the sample is trimmed to mitigate outlier effects. In the analysis stage, to ensure the tests are not influenced by extreme outliers, the top and the bottom 1 per cent observations are winsorised. The analysis has two parts, descriptive and regression so where appropriate parametric and non-parametric econometric analysis is applied to arrive at the result. The study uses the multivariate balanced panel regression method to test the hypotheses regarding the research questions raised and to estimate the model in equation (8). In order to analyse the impact of variables that vary over time, the study employs fixed effects models which are found to be more efficient and consistent (Greene, 2007).

5.5.2 Panel data estimation, Fixed Effects and Interaction Terms

This study employs the panel data regression techniques over ordinary least square (OLS) for two major reasons. First, panel data regression techniques are used in order to avoid or reduce the risk of violating the assumptions under the OLS estimators as discussed in Chapter 5 (see Greene, 2007; Ayyangar, 2007; Haniffa and Hudaib, 2006). Second, simple OLS regressions may fail to identify unobserved firm-specific heterogeneities because firms usually vary in terms of the difficulties and prospects that they face over time (Larcker and Rusticus, 2010). Hence, given the panel nature of dataset for this study and following past studies (Guest, 2009; Henry, 2008), the study employs panel data regression techniques to control for potential endogeneity that may emerge from unobserved company-specific heterogeneities.
The use of a panel database increases the number of observations although this introduces potential biases in the estimation. In order to account for unobservable individual effects and to avoid a situation where observations of different companies present different variances, the study includes firm fixed effects estimations in all regression models. Apart from using Haussmann tests to help evaluate whether the statistical model corresponds to the data, it is also used to check for strict exogeneity and differentiate between fixed effects model and random effects model in panel data. The Haussmann tests indicated that the relationship between x variables and $\varepsilon_i$ is found to be significant or less than 0.05. Therefore, based on the statistical justifications provided by Greene (2007) and Judge et al. (1985), the Fixed Effects (FE) is more relevant to this data and thus preferred.

The inclusion of a specification with firm fixed effects controls for differences in time-invariant characteristics across firms. The firm fixed effects regression also serves as the first attempt to effectively address the concern of omitted correlated variables, thus indicating that potentially large sources of omitted variable bias (OVB) have been removed. This keeps the firm heterogeneity fixed over time. Therefore, holding a firm’s characteristics constant makes the results of this study robust. As a result, the firm fixed effects regression will help control for omitted variables that differ among panels but are constant over time. The study did consider the possibility of a violation of the assumption of independence in a time-series regression, and therefore, includes period dummy to represent the three distinct periods in the models.

Relationships between variables are often more complex than a simple bivariate relationship between predictor and a criterion. Rather, these relationships may be modified by, or informed by the addition of a third variable (covariates, mediators or
moderators) in the research design (MacKinnon et al., 2000). Based on the discussion on
the effects of corporate governance on earnings management (in Chapters 3 and 5), it is
assumed that the relationship between CEO compensation variable and DACC differs at
different levels of corporate governance (Strong or Weak) variables. Hence a moderation
model that includes the main effects and the interaction of the main effects, discretionary
accruals variable, corporate governance and period dummies is created.

5.5.3 Empirical Model

This section specifies the model for the regression analysis used in this research. It
involves applying available literature or theories into a statistical statement. The process
involves selecting an appropriate functional form for the model and choosing which
variables to include and the relationship among the variables. In estimating the model for
this study, care is taken to ensure that it is not mis-specified as doing so may lead to
biased and highly inaccurate results. This study employs a three-tier approach to test the
hypotheses by adopting three measures of compensation based on the CEO
compensation structure in Australia.

The first measurement of CEO compensation is fixed compensation (FCOM), which is
made up of basic salary and superannuation. The second is bonus compensation
(BCOM), which consists of payments for the year based on meeting or exceeding the
budget targets as set and approved by the board of the company for the year. The third
measure of compensation is total compensation (TCOM) which is the aggregate level of
CEO compensation including the sum of salary, fees, benefits, commissions, bonuses
and all other payments for the year.
Each individual component of CEO compensation is examined to determine its relationship with earnings management for all three periods and the role of corporate governance. Discretionary accruals (DACC), a proxy for earnings management is used as the independent or test variable while firm characteristics, size (SIZE), leverage (LEV) and return on assets (ROA) are controlled variables as discussed in Section 5.4.3. The study develops the following models to examine whether the relationship of CEO compensation and earnings management varies from one economic period to another and the role of corporate governance in moderating the relationship.

The following models are developed to test the hypotheses formulated for the study. The first model is a general model (a reduced model) which examines whether or not there is a difference between the relationship between CEO compensation and earnings management in the three periods. This model is formulated to assume no effect of the GFC and that all periods are similar.

\[
CEOCOMP_{it} = f(FCOM_{it}, BCOM_{it}, TCOM_{it})
= \alpha_0 + \beta_1 \text{DACC}_{it} + \beta_2 \text{CONTROLS}_{it} + \gamma_i + \epsilon_{it} 
\]

EQ (5)

Where: CEOCOMP is the level of compensation measured as bonus-based compensation (BCOM) or fixed compensation (FCOM) or total compensation (TCOM), DACC is discretionary accruals defined as the absolute value of discretionary accruals; CONTROLS, with \( \gamma \) referring to the firm-specific fixed-effects, consisting of a vector of the mean differences of all time variant variables and error term.

In the next model, the relationship is allowed to differ with the inclusion of dummy variables for the Pre-crisis, during-crisis and Post-crisis periods. These dummy variables...
interact with earnings management to see how when interacted with periods, earnings management relates to CEO compensation. Hence the following model:

$$CEOCOMP_{it} = f (FCOM_{it}, BCOM_{it}, TCOM_{it}) = a0 + \beta_1 DACC_{it} + \beta_2 (DACC_{it} \ast P2_{it}) + \beta_3 (DACC_{it} \ast P3_{it}) + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \gamma_i + \epsilon_{it}.$$ \hspace{1cm} EQ (6)

In this model the incremental effect of DACC on CEO compensation with the effect of the GFC is captured by ($\beta_1+\beta_2+\beta_3$).

Where: FCOM is the proxy for the fixed compensation; BCOM is the bonus compensation with TCOM as the total compensation. DACC is discretionary accruals a proxy for earnings management, size refers to the size of the firm measured by log of total assets, LEV refers to leverage, ROA is proxy for performance measured as return on assets, P2 (period 2) a dummy variable coded 1 if the firm year observation is during the Crisis period and zero if otherwise, and P3 (period 3) a dummy variable coded 1 if the firm year observation is during Post-crisis period otherwise zero, with $\gamma$ referring to the firm-specific fixed-effects, consisting of a vector of the mean differences of all time variant variables and error term.

The next model tests for the moderating effect of corporate governance. Hence, this model includes the corporate governance score obtained by firms from the corporate governance index.

$$CEOCOMP_{it} = f (FCOM_{it}, BCOM_{it}, TCOM_{it})$$

$$= a0 + \beta_1 DACC_{it} + \beta_2 (CG_{it} \ast DACC_{it}) + \beta_3 SIZE_{it} + \beta_4 LEV_{it}$$

$$+ \beta_5 ROA_{it} + \gamma_i + \epsilon_{it} \hspace{1cm} EQ (7)$$
Where: CG is the corporate governance score obtained by firms from the corporate governance index. The interaction effect between earnings management and corporate governance score is expected to be negative. All other variables are as explained in EQ (6).

In this model the governance variable introduced (SCG) takes the value of 1, where a firm identifies with strong corporate governance firms’ group and zero if otherwise.

\[
CEOCOMP_{it} = f (FCOM_{it}, BCOM_{it}, TCOM_{it}) = a0 + \beta_1 DACC_{it} + \beta_2 (SCG_{it} \ast DACC_{it}) + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 ROA_{it} + \gamma_i + \epsilon_{it}
\]

EQ (8)

In this model the incremental effect of DACC on CEO compensation with the effect of the GFC is captured by \((\beta_1 + \beta_2)\).

Where: SCG is corporate governance dummy variable equal to 1 if a firm is in the strong corporate firms’ group, = 0 if otherwise, and all variables are as explained in the previous model.

The next model is what this study calls the “super-full model”, where the models (5) to (7) are merged together:

\[
CEOCOMP_{it} = f (FCOM_{it}, BCOM_{it}, TCOM_{it}) = a0 + \beta_1 DACC_{it} + \beta_2 (DACC_{it} \ast P2_{it}) + \beta_3 (DACC_{it} \ast P3_{it}) + \beta_4 (SCG_{it} \ast DACC_{it}) + \beta_5 (SCG_{it} \ast DACC_{it} \ast P2_{it}) + \beta_6 (SCG_{it} \ast DACC_{it} \ast P3_{it}) + \beta_7 SIZE_{it} + \beta_8 LEV_{it} + \beta_9 ROA_{it} + \gamma_i + \epsilon_{it}
\]

EQ (9)
Where: All variables are same as described in EQ (6).

In this model the incremental effect of DACC on CEO compensation with the effect of the GFC is captured by \((\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \beta_6)\). The null hypothesis for this study is that “none of the interaction variables have any effect in either the period or the corporate governance dimensions”, that is \(\beta_2 = \beta_3 = 0\) for the model EQ (6) and \(\beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0\) for the model EQ (8). This study uses Residual Sum of Squares (here forth SSR) from each model to identify whether or not there are any significant effects. If the null hypotheses are accepted, then the reduced model EQ (5) is the preferred model. On the other hand, if the null hypotheses are rejected, this indicates that none of the additional (interaction) coefficients are non-zero and therefore significant effects are identified.

It is important to note that in using dummy variables (P1, P2 and P3 for period model and SCG and WCG for corporate governance) for the models, one indicator from each set is not included in the model as doing so would create a model in which exact Collinearity exists (see Hill, Griffiths and Lim, 2011; Hair et al., 2010; Greene, 2007; O’Brien, 2007; Gujarati, 2003). In the models, P1 (pre-crisis period) and x WCG (weak corporate governance) is considered the omitted variable, so compensation given those is given by: \(CEOCOMP_{it} | WCG, Period 1| = a + \beta_1 (DACC)\). For corporate governance variables CG, SCG is assigned the value 1 and 0 for WCG firms. Hence, Model 7 can be expressed as two separate equations for strong and weak corporate governance firms. Other cells include modifications indicated by the relevant dummies and interaction coefficients.
5.6 Conclusion

This chapter describes the research methods employed for this thesis. It starts with the sources of data followed by the relevant sample selection procedures. Altogether, this study uses 300 listed firms to investigate how corporate governance and the Global Financial Crisis affect the relationship between CEO compensation and earnings management in Australia. The description and measurement of each variable is carefully defined and further examined using suitable statistical analysis procedures. This chapter outlines the research design and method of statistical analysis that is employed in testing the hypotheses developed in Chapter Four.
CHAPTER 6
Empirical Results and Discussion

6.1 Introduction
This chapter discusses the results of this study. In line with the objectives of the study, this chapter applies the research methods and empirical models already outlined, performing tests to provide empirical evidence to address the following research questions:

1. How does the GFC change the relationship between CEO compensation and earnings management of ASX firms when compared to the pre- and post-GFC eras?

2. How does the strength of corporate governance moderate the relationship between CEO compensation and earnings management of ASX firms?

3. How do the GFC and Corporate Governance jointly affect the relationship between CEO compensation and earnings management of ASX firms?

The chapter first reports the quantitative descriptive results of the data and the pattern of the various variables showing the nature, characteristics and structure of the data by using descriptive and univariate analyses. Later, the results of the multivariate test are presented.

The rest of the chapter is organised as follows: Section 6.2 presents and discusses the descriptive statistics of the variables of interest. Section 6.3 discusses the results of univariate tests pertaining to the variables and the data used in this study. It also includes a discussion on the correlation analysis. Section 6.4 describes the panel data estimation, Fixed Effects and Interaction terms. Section 6.5 explains all the empirical results regarding the testing of the hypotheses for all variables. Section 6.6 outlines additional
analyses including robustness checks and Section 6.7 summarises and concludes the chapter.

6.2 Descriptive Statistics

Table 6.1 presents the descriptive statistics and shows the results under two main groups, Strong Corporate Governance firms (SCG-firms) and Weak Corporate Governance firms (WCG-firms) in panels A and B, respectively. Separating the results into the two main groups allows an examination of the differences between variables of interest under each of the corporate governance groups. The descriptive statistics present CEO compensation variables (Salary, Bonus, Other and Total) in Australian dollars. However, the dollar values are real amounts of compensation after the nominal amounts were indexed with the inflation figures (see Appendix 5.1). This is done to deflate the nominal amount to account for the annual growth of compensation (due to normal annual increase).

Panel C of Table 6.1 reports the combined compensation of both SCG and WCG firms with reported total compensation mean of $740,600. The range between minimum and maximum compensation is very wide, from $10,406 to high of $6,941,085. This demonstrates a huge disparity in the CEO compensation practices in the listed firms. The means of total compensation are $899,799 and $540,321 for Strong Corporate Governance (SCG) and Weak Corporate Governance (WCG) firms, respectively, for the sampled firms in Australia. The range for total compensation is $226,892 to $6,941,085 for SCG firms while, the range of CEO compensation in WCG firms is lower from $10,406 to $1,148,916. The median CEO total compensation for the SCG firms in this sample is found to be $830,612 as against $432,618 for WCG firms. It is obvious that CEOs of the WCG firms receive lower compensation compared to their counterparts in
SCG. The causes of such disparity may be due to varied firm size, operational policies and different compensation structures. Even though there is much variety across the sample firms in published studies, the compensation values here compare well with figures reported by Fleming and Stellios (2002), Chalmers, Koh and Stapledon (2006) and Matolcsy and Wright (2006a).

Though not reported in Table 6.1, the compensation structure for the firms reveals little difference between the groups and indeed prior literature on Australian firms. It can be observed from Table 6.1 that CEO compensation in Australia has a range of 42% to 44% of fixed salary and about 32% for bonus. This reflects a general pattern in terms of structure and will be discussed in Section 6.2.1. The other compensation components representing Other Compensation which is inclusive of equity-based compensation are marginally different at 23% for SCG firms and 25.8% for WCG firms. This is consistent with Izan et al. (1998) and Matolcsy and Wright (2007) who document that fixed and bonus compensation is more popular among Australian firms.

An observation of the descriptive statistics also indicates that SCG firms with higher compensation have smaller absolute value of discretionary accruals than WCG firms. Table 6.1 shows non-surprising results which is consistent with prior studies (see Sun and Rath, 2009; 2012; Liu, 2012; Hutchinson, Percy, and Erkurtoglu, 2008). The estimate of discretionary accruals (DACC) computed by modified Jones model (Dechow, Sloan, and Sweeney, 1995), has a mean and median that is considerably different for the groups. The absolute value of DACC for the companies in the SCG sample has a smaller mean value of about 6% and with a minimum value of 0. The WCG sample has a 10.3% absolute value of discretionary accruals, even though both have a minimum value of 0%. The preceding discussion suggests that WCG firms are
more likely to be exposed to higher magnitude of earnings management than their counterparts in the SCG group. This is because the level of monitoring in weak corporate governance firms is less effective which makes stopping managements' behaviour less effective. Another important observation from Table 6.1 is that there is a very high skewness and kurtosis for FCOM, BCOM and DACC variables.

Table 6.1

Descriptive Statistics of Strong Corporate Governance (SCG) firms and Weak Corporate Governance (WCG) Firms for the whole period (2005-2006)

<table>
<thead>
<tr>
<th>Panel A: Strong Corporate Governance (SCG) Firms</th>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Kurtosis</th>
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<td>17.877</td>
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<td></td>
<td>OCOM</td>
<td>209071</td>
<td>175152</td>
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<td>2795</td>
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<td>5.708</td>
</tr>
<tr>
<td></td>
<td>TCOM</td>
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<td>3.056</td>
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<td>0.012</td>
<td>0.013</td>
<td>0.000</td>
<td>0.471</td>
<td>6.275</td>
<td>74.241</td>
</tr>
<tr>
<td>Cont'l V'bles</td>
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<td>21.87</td>
<td>1.827</td>
<td>15.43</td>
<td>25.59</td>
<td>0.183</td>
<td>2.803</td>
</tr>
<tr>
<td></td>
<td>LEV</td>
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<td>23.39</td>
<td>18.00</td>
<td>0.000</td>
<td>117.7</td>
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<td>0.325</td>
<td>-0.484</td>
<td>5.472</td>
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<table>
<thead>
<tr>
<th>Panel B: Weak Corporate Governance (WCG) Firms</th>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Kurtosis</th>
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<td>OCOM</td>
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<td>91482</td>
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<td>429524</td>
<td>10406</td>
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<tr>
<td></td>
<td>LEV</td>
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<td>0.000</td>
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<td>0.918</td>
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</table>
Panel C: Combined All Firms Sample

<table>
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<tr>
<th>Variables</th>
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<th>Mean</th>
<th>Median</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Kurtosis</th>
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</thead>
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<td>FCOM</td>
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<td>323849</td>
<td>315224</td>
<td>107949</td>
<td>8138</td>
<td>866289</td>
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<td>59.674</td>
</tr>
<tr>
<td>BCOM</td>
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<td>237575</td>
<td>199247</td>
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<td>9479</td>
<td>1478814</td>
<td>3.8115</td>
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<tr>
<td>OCOM</td>
<td></td>
<td>179176</td>
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<td>105364</td>
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<td>1923886</td>
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<td>7.696</td>
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<tr>
<td>TCOM</td>
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<td>740600</td>
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<td>589214</td>
<td>10406</td>
<td>6941085</td>
<td>2.2775</td>
<td>3.88</td>
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<table>
<thead>
<tr>
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<th>0.056</th>
<th>0.0495</th>
<th>0.000</th>
<th>0.619</th>
<th>6.275</th>
<th>74.241</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cont’l V’bles</td>
<td>SIZE</td>
<td>19.465</td>
<td>19.735</td>
<td>1.675</td>
<td>13.94</td>
<td>23.565</td>
<td>0.183</td>
<td>2.803</td>
</tr>
<tr>
<td></td>
<td>LEV</td>
<td>24.89</td>
<td>23.755</td>
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<td>117.25</td>
<td>0.971</td>
<td>4.756</td>
</tr>
<tr>
<td></td>
<td>ROA</td>
<td>0.024</td>
<td>0.0155</td>
<td>0.0465</td>
<td>-0.095</td>
<td>0.224</td>
<td>-0.484</td>
<td>5.472</td>
</tr>
</tbody>
</table>

Where: FCOM is the Fixed Salary= Total dollar basic salary reported by firms, BCOM is Bonus= Total dollar bonus compensation reported by firms, OCOM is Other= total dollar compensation paid other than fixed and bonus compensation, TCOM is Total Compensation= Sum of individual components of compensation, DACC= Discretionary Accruals proxy for earnings management, Size= The natural log of Total Assets, Leverage= Financial leverage measured as the ratio of debt and equity and ROA= Return on Assets

Table 6.1 does not only indicate that WCG firms engage in more extensive earnings management through discretionary accruals than their counterparts. It also shows that descriptive statistics for the other variables, namely, size, leverage and return on assets are varied for the two groups. Specifically, the WCG firms are generally smaller in size (by total assets) with a mean (median) of 17.59 (17.60) than the SCG group with mean and median of 21.74 (21.87), respectively. It can, therefore, be inferred that firms with strong corporate governance systems are larger and engaged in smaller estimate discretionary accruals (DACC). Consequently, the firm size seems to reflect the level of CEO compensation.

The descriptive results again reflect in both samples relatively high leverage values and that firms are leveraged (LEV) to a considerable degree with means (medians) 24.89 (23.39) and 22.82 (22.12) for SCG firms and WCG firms, respectively. It also points to the fact that higher leveraged firms are larger in size and CEO compensation payout is generally higher. In addition, the extent of earnings management decreases for such
firms in the SCG group than those in the WCG group. The SCG firms have higher ROA than the WCG firms.

6.2.1 Compensation Structure

Even though the focus of the study is not on the structure of compensation, an understanding of how the CEO compensation structure changed concurrent with the Global Financial Crisis will give further insight into the relationship of the compensation and the effect of the GFC on the compensation structure. This study defines compensation structure as the relationship of each component to the total compensation. It explains which component of compensation firms emphasise more; either the CEO is paid more in fixed compensation, bonus compensation or in other components.

<table>
<thead>
<tr>
<th>Table 6.2 Compensation Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Crisis</strong></td>
</tr>
<tr>
<td>Compensation components</td>
</tr>
<tr>
<td>SCG Firms</td>
</tr>
<tr>
<td>FCOM</td>
</tr>
<tr>
<td>BCOM</td>
</tr>
<tr>
<td>OCOM</td>
</tr>
<tr>
<td>TCOM</td>
</tr>
</tbody>
</table>

WCG Firms

FCOM | 192207 | 42.31% | 232189 | 41.63% | 262125 | 42.59% |
| BCOM | 142644 | 31.40% | 186304 | 33.40% | 163001 | 26.49% |
| OCOM | 119428 | 26.29% | 139303 | 24.97% | 190299 | 30.92% |
| TCOM | 454280 | 100.00% | 557796 | 100.00% | 615424 | 100.00% |

Where: FCOM is Fixed Salary= Total dollar basic salary reported by firms, BCOM is Bonus= Total dollar bonus compensation reported by firms, OCOM is Other = total dollar compensation paid other than fixed and bonus compensation, TCOM is Total Compensation= Sum of individual components of compensation
Overall, bonus as a percentage of total compensation for SCG firms fluctuated from 38.5% in the pre-crisis period to 31.37% during the crisis and then marginally recovered to 31.55% in the post-crisis period. For the WCG firms bonus fluctuated from 31.4% in pre-crisis period to 33.4% and then declined to 26.49% in the crisis and post-crisis periods. While SCG firms have bonus decreases for the crisis period, notably WCG firms’ bonus increases for the same period. On the part of SCG firms, firm performance is worse during a crisis, which therefore indicates no reason to pay out performance-related remuneration. However, the increase in bonus for WCG firms may be due to the earnings management other than performance. Even though there was a significant increase in the OCOM for SCG firms from 15.9% in the pre-crisis period to 26% during the crisis period, WCG firms declined from 26.3% to 24.97% before rising again to 30.92%, for the pre-crisis, crisis and post-crisis periods, respectively. In order to provide further insight into the fluctuations of individual compensation components in the average CEO compensation structure, Table 6.2 reports the compensation structure.

It is indicative from Table 6.2 that the proportion of compensation from fixed compensation is significantly high in the structure for both SCG firms and WCG firms 45.6% and 42.3%, respectively, in pre-crisis period. This confirms that CEOs in Australian firms are paid more in fixed salary than other component which is consistent with prior research (see Sun and Rath, 2011; Matolcsy and Wright, 2007; Chalmers et al., 2006; Izan et al., 1998).The bonus component of compensation for SCG firms represents the second largest fraction of the total compensation. However, it starts falling while OCOM (which includes option/stock) increases. On the other hand, bonus as a percentage of total compensation for WCG firms experienced a fall to a low of 26.49% in the post-crisis period. This is after an increase from 31.40% at pre-crisis to a peak of 33.40% during the crisis period. The proportion of compensation accounted for by other
compensations (OCOM) fluctuates substantially through the periods. With reference to SCG firms, it increased by about 64% from 15.92% in pre-crisis to 26.18% during the crisis period. The fraction, however, decreases marginally by 5% to 24.85% post-crisis (from 26% in crisis) possibly as a result of concerns about a requirement to dispose of stock options (see Carter et al., 2009). In the case of the WCG firms, the pattern of the movement decreases in the crisis period but markedly increases in the post-crisis period. This indicates that compensation structure changes significantly during the post-crisis period especially for Other Compensation (OCOM) rather than Bonus Compensation (BCOM).

### 6.2.2 Descriptive Statistics for Corporate Governance Elements

As part of descriptive statistics, this section presents the analysis of the characteristics of the board of directors and the committees under the corporate governance structure (see Appendix C). These characteristics were used in the construction of the governance index. Table 6.3 presents the descriptive statistics of corporate governance elements used in the construction corporate governance index. The focus of the study is not on the detailed description of the elements of the corporate governance elements and therefore, will not elaborate on the results. However, a few are selected for observation. The results as presented show the average board of directors size variables is 9 (median=9.2), whereas the largest and the smallest are 19 and 3 directors, respectively. These findings are slightly different from Chalmers et al. (2006) who show a median of 8, minimum and maximum of 3 and 17, respectively, for board size.
Table 6.3
Descriptive Statistics of the Variables for Corporate Governance Index

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Min</th>
<th>Max</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
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<tr>
<td>ACFC</td>
<td>300</td>
<td>0.62</td>
<td>0.59</td>
<td>0</td>
<td>1</td>
<td>0.72</td>
<td>0.808</td>
<td>3.914</td>
</tr>
<tr>
<td>RC</td>
<td>300</td>
<td>0.792</td>
<td>0.81</td>
<td>0</td>
<td>1</td>
<td>0.85</td>
<td>4.745</td>
<td>40.455</td>
</tr>
<tr>
<td>RCMIND</td>
<td>300</td>
<td>0.56</td>
<td>0.47</td>
<td>0</td>
<td>1</td>
<td>0.557</td>
<td>1.621</td>
<td>5.809</td>
</tr>
<tr>
<td>RCINDCH</td>
<td>300</td>
<td>0.96</td>
<td>0.95</td>
<td>0</td>
<td>1</td>
<td>0.89</td>
<td>1.137</td>
<td>3.639</td>
</tr>
<tr>
<td>RCSIZE</td>
<td>300</td>
<td>3.9</td>
<td>4</td>
<td>3</td>
<td>8</td>
<td>1.006</td>
<td>0.8016</td>
<td>3.453</td>
</tr>
<tr>
<td>CGScore</td>
<td>300</td>
<td>11.6</td>
<td>12.4</td>
<td>9</td>
<td>20</td>
<td>4.6</td>
<td>1.6</td>
<td>5.82</td>
</tr>
<tr>
<td>SCG (12.4 &amp; above)</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WCGF (below 12)</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where BSIZE= Board Size, BMNED= Board Majority Non-Exe Directors, IND= Independent Directors, RDUAL= Role Duality INCH= Independent chairperson, NC=Nominating Committee, MINC= Majority Independent Nominating Committee, PAC=Presence of Audit committee, ACSIZE= Audit size, ACWNED= Audit committee wholly Non-Executive Directors, ACMIND=Audit Committee Majority Independent Directors, ACINDCH= Audit committee Independent Chair (not chair of the board), ACFEXPCH=Audit Committee Financial Expertise Chair, ACMJFEX=Audit Committee Majority with Financial Expertise, ACDEL= Audit committee Diligence (measured by Frequency of meeting) ACFC= Audit Committee Formal Charter, RC= Remuneration Committee Presence, RCMIND= Majority Independence, RCINDCH= Remuneration Committee Independent Chair, RCSIZE= Remuneration Committee Size, CGScore = Corporate Governance Score, SCG=Strong Corporate Governance Firms (firms which score 12.4 or above, WCGF= Weak Corporate Governance Firms (firms which scored below 12.4).

The descriptive statistics of the proportion of independent directors on the board (INDs) indicate that on average, 57.9% of the directors on the board in the sample are independent ones with almost the same for median (57%). Moreover, the proportion of non-executive directors (BMNEDs) shows that, on average, around 64% of the boards (median=72%) consist of non-executive directors. This is consistent with the corporate
governance code’s recommendations which state that the majority of board members should consist of independent non-executive directors.

Regarding the CEO-chairman duality, the descriptive statistics demonstrate that around 6.5% of the CEOs of the firms in the sample do chair the board of directors, while around 93.5% of the firms separate these roles. This outcome shows firms’ compliance is substantial but not complete. The Corporate Governance Code (2003) emphasises the importance of separating the roles of chairman of the board and that of chairman of the remuneration committee, implying that the duality of these positions might affect the remuneration committee’s independence in setting managerial compensation. The firms in the sample illustrated considerable levels of compliance to this provision with 91% separating the two roles. That is, it is found, on average that these two positions are occupied by the same individual in only 9% of the firms. The remuneration committee size variables (RCSIZE) is around 4 directors (mean=3.9) with a median of 4. Moreover, this result implies that the Code’s requirement in terms of the remuneration committee size, states that the board should establish a remuneration committee of at least three non-executive independent directors.

The mean (median) of the proportion of independent directors on remuneration committees (RCMIND) is 97% (100%). Although this average is relatively high, it does not reflect a complete compliance with the Code’s recommendation which requires boards of directors to establish fully independent remuneration committees. Lastly, the measure for audit committee chairman’s independence (ACINDCH) shows that 74% of the sample firms had independent chairmen at the time of their appointment. Like other most variables, this variable’s finding illustrates a high compliance rate with the
Corporate Governance Code’s recommendations on chairman independence. However, it is necessary to increase the provision’s compliance measures.

6.3 Univariate Analysis

Section 6.3 reports the variables of interest in terms of measures of central tendency and the dispersion measures of the values. This section is divided into three parts. First, it examines the normality of variables. Second, it demonstrates the means differences. Third, it presents the correlation matrix among the testable variables.

6.3.1 Normality of Data

In order to undertake a statistical test such as regression, it is desirable that data are normally distributed. Non-normally distributed data may have nominal unusual influence in this analysis. It is argued that outliers may influence the results of a statistical test (Pallant, 2007). Consequently, outliers identified in the data are removed to improve normality. In this study, however, variables are winsorised at 1 per cent at the top and at the bottom, where the 100th percentile is replaced with the highest value of 99th percentile, and the 1st percentile is replaced with the lowest value of 2nd percentile. It is argued that winsorising for less than 5 per cent data point will not likely affect the hypothesis testing outcome as argued by Duan (1997) and Hawkins (1980).

The data in this study combines variables from both large and small firms in the same model. With likely varied differences the presence of heteroscedasticity is expected. In order to ensure the presence of homoscedasticity in the large uneven variables among the firms in our sample, the values of total assets and CEO compensation (for regression purposes) are replaced by their natural logarithmic values. The skewness of the data
which measures the asymmetry and kurtosis which in turn measures the peak of the
distribution is reported in Table 6.1.

6.3.2 Statistical Test of Mean Differences

One of the underpinning assumptions of all the hypotheses in this study is that the
distributions for the two corporate governance groups and also for the three periods (Pre-
crisis, Crisis and Post-Crisis) is stochastically different. Consequently, the dataset is
presented separately under the two corporate governance groups (strong and weak).
Each group is further divided into three distinct periods (Pre-crisis, Crisis and Post-
Crisis). This is to establish the changes in variables among the three unique periods and
simultaneously between the two corporate governance groups to facilitate easy
comparison. The study performs Levene’s Test (see Nordstokke et al., 2011;
Zimmerman, 2004; Zumbo and Coulombe, 1997) to establish the need to undertake the
test of mean differences.

This study further examines the differences of the distribution of the groups and the
periods. This study employs both Mann–Whitney–Wilcoxon (MWW) and T-test. Both
tests are used to determine if a difference exists between two "groups". The major
difference between the Mann-Whitney U Test and Student's t-Test involves the concept
of normal distribution. The Mann-Whitney test is a non-parametric equivalent of the
independent samples t-test but known to be more robust and have greater efficiency than
the t-test on non-normal distributions (See Nordstokke, Zumbo, Cairns and Saklofske,
is also nearly as efficient as the t-test on normal distributions. The Mann–Whitney is less
likely than the t-test to spuriously indicate significance because of the presence of
outliers (see Bergmann, Ludbrook, and Spooren, 2000; Mason and Graham, 2002). This
study applies both t-test and Mann Whitney test to decide whether or not the data distributions are identical without assuming they follow the normal distribution and also for robustness.

6.3.2.1 Statistical Test of Mean Differences between groups

This section reports the results on whether the means of the two groups (SCG firms and WCG firms) differ significantly during the three periods (pre-crisis, crisis, and post-crisis). In this analysis, the null hypothesis is that there are no significant differences between the two corporate governance groups. The results of the statistical tests as expected to indicate notable variations across firms in the value and pattern when the two groups are compared. The results, both Mann–Whitney–Wilcoxon and T-tests indicate that there is certainly sufficient information to reject the null hypothesis and to declare that there are differences between the two corporate governance groups in terms of variable distribution. It is worth mentioning that the focus is not on the direction of the change but whether or not changes exist in the sample. The results of both Mann–Whitney–Wilcoxon and t-test are provided in Table 6.4.

Table 6.4 shows significant differences for compensation components over the periods. For example, BCOM consistently, is significant at the 1% level (P<0.0001) as evident by both Mann–Whitney–Wilcoxon and T-tests. The results indicate the variability of bonus compensation. The TCOM also shows significant changes at the 10% level and the changes in other variables over three periods, however, at different levels is also worthy of notice. In the Pre-crisis period, DACC is 2.4% for SCG however; the WCG firms have a value of 10.2% which is an indication of a large difference at 1% level. Again the Crisis period also shows a significant difference for DACC at 1.9% and 11.3% level for SCG and WCG firms, respectively. The Post-Crisis period shows yet another difference
between the DACC values for SCG and WCG firms. The changes in the other variables are not proportionate to compensation and DACC. Furthermore the differences evident in Table 6.3 above establish the existence of differences between the variables for SCG and WCG firms.

The breakdown of time periods into pre-crisis, crisis and post-crisis should enable the study to compare and contrast changes across the three distinct economic environments. Table 6.5 presents a summary of the statistics of the pattern of the variables of interest across the three unique periods. Table 6.5 compares the periods in pairs to establish the differences from one period to the other as well as the percentage changes.

6.3.2.2 Statistical Test of Mean Differences between Periods

Table 6.5 shows the different levels of percentage change in the variables. A cursory look at the pattern of compensation from Table 6.5 shows that generally, there is a steady growth in the level of total CEO compensation over the period under investigation for both the SCG and WCG firms at different proportions and in some cases marginally. This ranges from a mean of $744,114 in the pre-crisis period to $847,945 and then $1,167,099 in the crisis and post-crisis periods, respectively, for SCG firms. On the other hand, WCG firms experienced an increase in total CEO compensation from $454,280 to $557,796 and then to $615,424 for the pre-crisis, crisis and post-crisis periods, respectively. The results demonstrate the various changes in the variables from one period to another.
## Table 6.4
Comparing Mean Differences for SCG and WCG

### Panel A: Pre-Crisis Period (2005/2006)

<table>
<thead>
<tr>
<th>Variables</th>
<th>SCG (N= 240 obs.)</th>
<th>WCG (N= 360 obs.)</th>
<th>T-test</th>
<th>Mann Whitney test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>% to total comp</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>FCOM</td>
<td>339,070</td>
<td>48.73</td>
<td>297,495</td>
<td>42.31</td>
</tr>
<tr>
<td>BCOM</td>
<td>286,574</td>
<td>34.24</td>
<td>208,991</td>
<td>31.40</td>
</tr>
<tr>
<td>OCOM</td>
<td>118,470</td>
<td>17.03</td>
<td>716,191</td>
<td>26.29</td>
</tr>
<tr>
<td>TCOM</td>
<td>695,739</td>
<td>100.00</td>
<td>502,598</td>
<td>100.00</td>
</tr>
<tr>
<td>DACC</td>
<td>0.024</td>
<td>0.014</td>
<td>0.102</td>
<td>0.006</td>
</tr>
<tr>
<td>SIZE</td>
<td>21.43</td>
<td>1.99</td>
<td>17.34</td>
<td>1.48</td>
</tr>
<tr>
<td>LEV</td>
<td>23.41</td>
<td>16.66</td>
<td>26.37</td>
<td>19.170</td>
</tr>
<tr>
<td>ROA</td>
<td>0.012</td>
<td>0.017</td>
<td>0.003</td>
<td>0.015</td>
</tr>
</tbody>
</table>

***significant at 1 per cent level,
**significant at 5 per cent level,
* significant at 10 per cent level

Where: FCOM is Fixed Salary= Total dollar basic salary reported by firms, BCOM is Bonus= Total dollar bonus compensation reported by firms, OCOM is Other= Total dollar compensation paid other than fixed and bonus compensation, TCOM is Total Compensation= Sum of individual components of compensation, DACC= Discretionary Accruals proxy for earnings management, SIZE= The natural log of Total Assets, LEVERAGE= Financial leverage measured as the ratio of debt and equity and ROA= Return on Assets.

### Panel B: Crisis Period (2007/2008)

<table>
<thead>
<tr>
<th>Variables</th>
<th>SCG (N= 240 obs.)</th>
<th>WCG (N= 360 obs.)</th>
<th>T-test</th>
<th>Mann Whitney test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>% to total comp</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>FCOM</td>
<td>359,954</td>
<td>42.45</td>
<td>253,046</td>
<td>41.63</td>
</tr>
<tr>
<td>BCOM</td>
<td>266,026</td>
<td>31.37</td>
<td>185,686</td>
<td>33.40</td>
</tr>
<tr>
<td>OCOM</td>
<td>221,965</td>
<td>26.18</td>
<td>140,188</td>
<td>24.97</td>
</tr>
<tr>
<td>TCOM</td>
<td>847,945</td>
<td>100.00</td>
<td>535,543</td>
<td>100.00</td>
</tr>
<tr>
<td>DACC</td>
<td>0.019</td>
<td>0.012</td>
<td>0.113</td>
<td>0.098</td>
</tr>
<tr>
<td>SIZE</td>
<td>21.82</td>
<td>1.738</td>
<td>17.73</td>
<td>1.42</td>
</tr>
<tr>
<td>LEV</td>
<td>27.20</td>
<td>19.04</td>
<td>22.60</td>
<td>16.63</td>
</tr>
<tr>
<td>ROA</td>
<td>0.011</td>
<td>0.018</td>
<td>0.011</td>
<td>0.007</td>
</tr>
</tbody>
</table>

### Panel C: Post-Crisis Period (2009/2010)

<table>
<thead>
<tr>
<th>Variables</th>
<th>SCG (N= 240 obs.)</th>
<th>WCG (N= 360 obs.)</th>
<th>T-test</th>
<th>Mann Whitney test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>% to total comp</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>FCOM</td>
<td>508,961</td>
<td>43.61</td>
<td>356,399</td>
<td>42.59</td>
</tr>
<tr>
<td>BCOM</td>
<td>368,165</td>
<td>31.55</td>
<td>25,7806</td>
<td>33.40</td>
</tr>
<tr>
<td>OCOM</td>
<td>289,974</td>
<td>24.84</td>
<td>179,507</td>
<td>26.49</td>
</tr>
<tr>
<td>TCOM</td>
<td>1,167,099</td>
<td>100.00</td>
<td>722,489</td>
<td>100.00</td>
</tr>
<tr>
<td>DACC</td>
<td>0.021</td>
<td>0.013</td>
<td>0.096</td>
<td>0.080</td>
</tr>
<tr>
<td>SIZE</td>
<td>21.97</td>
<td>1.71</td>
<td>17.70</td>
<td>1.63</td>
</tr>
<tr>
<td>LEV</td>
<td>24.12</td>
<td>16.89</td>
<td>23.48</td>
<td>17.12</td>
</tr>
<tr>
<td>ROA</td>
<td>0.017</td>
<td>0.010</td>
<td>0.019</td>
<td>0.011</td>
</tr>
</tbody>
</table>

***significant at 1 per cent level,
**significant at 5 per cent level,
* significant at 10 per cent level
6.3.2.2.1 Pre-crisis versus Crisis Periods

Table 6.5 demonstrates an increase in the average fixed compensation for SCG firms in from $339,071 to $359,954 from the pre-crisis period to the crisis period, a percentage change of about 6%. The movement is significant only at the 10% level (p-value =0.061). However, with the WCG firms, it moves from $192,207 to $232,189 a change of about 21% at 1% significance level (p = 0.008). The finding on the bonus compensation varies as shown in the table. There is a reduction (-7.2%) in bonus compensation for the SCG firms (from $286,574 in the pre-crisis period to $266,026 in the crisis period). This suggests the crisis had an impact on bonus compensation in Australia. On the other hand, the bonus compensation for WCG firms appreciates from $142,644 in the pre-crisis period to $186,304 in the crisis period, a change of about 30.7%. An examination into the cause of increase in bonus compensation in WCG firms is necessary, especially when there is no corresponding increase in performance as indicated by ROA.

It is important to note that while SCG firms have Other Compensation (OCOM) appreciated by about 84.8% during the crisis period, WCG firms have only 15% increase. Since other compensation includes option/stock element, it could be argued that the majority of SCG firms reduce the bonus component and instead increase the option/stock component. WCG firms during the crisis period on the other hand increase their bonus by almost 29% as against an increase of 15% for other compensation. Overall, total compensation of SCG firms increased by 12.4%, fuelled by a huge increase in other compensation. WCG firms experience a total compensation increase by 21% with a huge increase from 31% and 28.7% from fixed and bonus compensation, respectively.
### Table 6.5

Panel A: T-test Comparing Mean Differences for Periods Pre-Crisis, Crisis and Post-Crisis

<table>
<thead>
<tr>
<th>Panel A: SCG</th>
<th>Means</th>
<th>Differences/Changes</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variables</strong></td>
<td>Pre-Crisis</td>
<td>Crisis</td>
<td>Post-Crisis</td>
</tr>
<tr>
<td>FCOM</td>
<td>339,071</td>
<td>359,954</td>
<td>508,961</td>
</tr>
<tr>
<td>BCOM</td>
<td>286,574</td>
<td>266,026</td>
<td>368,165</td>
</tr>
<tr>
<td>OCOM</td>
<td>118,470</td>
<td>221,965</td>
<td>289,974</td>
</tr>
<tr>
<td>TCOM</td>
<td>744,114</td>
<td>847,945</td>
<td>1,167,099</td>
</tr>
<tr>
<td>DACC</td>
<td>0.024</td>
<td>0.019</td>
<td>0.021</td>
</tr>
<tr>
<td>SIZE</td>
<td>21.43</td>
<td>21.82</td>
<td>21.97</td>
</tr>
<tr>
<td>LEV</td>
<td>23.41</td>
<td>27.20</td>
<td>24.12</td>
</tr>
<tr>
<td>ROA</td>
<td>0.012</td>
<td>0.011</td>
<td>0.017</td>
</tr>
</tbody>
</table>

Panel B: WCG

| FCOM         | 192,207 | 232,189 | 262,125 | 39,982 | 75,677 | 35,695 | 0.008*** | 0.006*** | 0.034** |
| BCOM         | 142,644 | 186,304 | 163,001 | 43,660 | 23,938 | -19,722 | -19,722 | 0.022** | 0.00*** |
| OCOM         | 119,428 | 139,303 | 190,299 | 19,875 | 75,052 | 55,177 | 0.053* | 0.011*** | 0.025 |
| TCOM         | 454,280 | 557,796 | 615,424 | 103,516 | 174,666 | 71,150 | 0.004*** | 0.002*** | 0.055* |
| DACC         | 0.102 | 0.113 | 0.096 | 0.011 | -0.006 | -0.017 | 0.007*** | 0.106 | 0.030** |
| SIZE         | 17.34 | 17.73 | 17.70 | 0.39 | 0.355 | -0.035 | 0.045* | 0.082* | 0.113 |
| LEV          | 26.37 | 22.60 | 23.48 | -3.77 | -2.89 | 0.88 | 0.002*** | 0.023** | 0.092 |
| ROA          | 0.03 | -0.011 | -0.019 | -0.00 | -0.00 | 0.008 | 0.069* | 0.073* | 0.070 |

***significant at 1% level,
**significant at 5% level,
* significant at 10% level, Where: FCOM is Fixed Salary= Total dollar basic salary reported by firms, BCOM is Bonus= Total dollar bonus compensation reported by firms, OCOM is Other= total dollar compensation paid other than fixed and bonus compensation, TCOM is Total Compensation= Sum of individual components of compensation, DACC= Discretionary Accruals proxy for earnings management, Size= The natural log of Total Assets, Leverage= Financial leverage measured as the ratio of debt and equity and ROA= Return on Assets
The signs and significance of the coefficients of other variables are not surprising. Specifically, the extent of discretionary accruals reduced for SCG firms from 2.4% to 1.9%. The analysis shows an increase in discretionary accruals for WCG firms (from 10% to 11.3%) an increase of about 10% which is significant at 1% level. Under the same period, firm sizes for both SCG and WCG firms increased marginally. While leverage increased from 23.41 to 27.20 for SCG firms, WCG firms had a reduction in leverage, from 26.37 during the pre-crisis period to 22.60 in the crisis period. The reduction of ROA for both groups indicates a poor performance and is expected in periods such as the GFC.

6.3.2.2.2 Pre-Crisis versus Post-Crisis Periods

Evaluating the pre-crisis and post-crisis period’s results is not surprising due to the fact that the crisis period comes between these periods and substantial changes are expected in either direction. An examination of almost all the mean CEO compensation variables appreciated between pre-crisis and post-crisis periods for both SCG and WCG groups. For example, mean total compensation ranged from $744,114 to $1,167,099 for SCG firms while WCG firms have the pre-crisis period ($454,280) lower than in the post-period ($615,424). As shown in Table 6.5, the various components play a role in the appreciation of the mean compensation.

Overall, the net increase in total compensation for SCG firms is about 55% (un-tabulated results) with all the components having significance p-values at the 10% or less. However, an observation of the figures points to a substantial increase in the Other Compensations (OCOM) component which includes options/stocks, accounting for 142%. The substantial increase of 142% is possibly a result of SCG firms changing the structure of compensation to increase options and stocks as a way of aligning
executives’ interests with shareholders’ interests. The situation described above could also possibly be attributed to the effect of the GFC and the response of the compensation practices. That is, as the crisis subsides, this expected rise may be due to a stabilising condition and attracting an increase in compensation.

Table 6.5 shows that both groups have fluctuations in the discretionary accruals with similar direction, although with varied levels or extent. The means discretionary accruals for both groups SCG /WCG firms reveal a fall. SCG firms have discretionary accrual reduced from 0.024 in pre-crisis period to 0.021 in post-crisis, while WCG firms have a reduction from 0.102 to 0.096 for the pre-crisis and post-crisis periods, respectively. The margin of change does not differ significantly. For the SCG firms, discretionary accruals decrease from 0.024 in the pre-crisis period to 0.019 in the crisis period, though there is an increase to 0.021, between the pre-crisis and crisis periods.

On the other hand, WCG firms experience a decrease from 0.102 in the pre-crisis period to 0.096 in the post-crisis period after rising to 0.113 during the crisis period which represents a downwards change. Comparatively, the change for SCG firms is larger than that for WCG firms. The discretionary accruals (DACC) means during the pre-crisis is not significantly different to DACC means in the post-crisis period. It implies that in the period of non-crisis, management makes similar accrual decisions. However, when they encounter a crisis that affects company earnings, management will then manages earnings by changing their accrual in the crisis period. When a crisis is over in the post-crisis period and the situation starts to normalise, the discretionary accruals level also returns to the period before the crisis.
Other variables including size, leverage and return on assets experience fluctuations as well. For example, SCG firms have a sturdy increase in firm size, from 21.43 to 21.97 for the pre- and post-crisis periods, an increase of 2.5%. Even though this is marginal, considering the fact that the GFC affects the growth of firms, this may benefit firms. Similarly, WCG firms have an increase in size from 17.34 pre-crisis to 17.70 post-crisis periods. This is after a reduction in size during the crisis period for WCG firms. The results also show fluctuations for leverage and return on assets for both SCG and WCG firms. This confirms the unstable nature of the period under consideration and also the significant changes in almost all the variables.

6.3.2.2.3 Crisis versus Post-Crisis Periods

The analysis for the period from the crisis to the post-crisis is important because it examines the transition from decline to growth or at least stability. The crisis versus post-crisis analysis highlights the effect on the overall CEO compensation with a significant increase. The means of total compensation changes from $847,945 to $1,167,099, an increase of about 38% for the SCG firms. This is a reflection of an increase in other compensation components. For example, BCOM deteriorates during the crisis period from $286,574 in the pre-crisis period to $266,026; however, it increases back to $368,165 in the post-crisis period with p-value significant at 1% level. In other words, the crisis period affects CEO bonus adversely but recovers during the post-crisis period. Equally, FCOM and OCOM increase significantly at 1% levels, though these components do not fall from the pre-crisis period to the crisis period. The results especially for the BCOM suggest that the recovery from the GFC reflected on CEO compensation.
The CEO compensation variables for WCG firms equally, experience changes from one period to the other, though marginally. While FCOM has a marginal change of 3% upwards, with regards to the BCOM there is a downwards change of 12.3%. This reduction in bonus compensation may be due to less earnings management. A bigger change, however, is recorded for OCOM at about 37% change with \( p=0.025 \). A rise in BCOM in post-crisis period, after a fall during the crisis period may suggest that WCG firms exercise income-increasing discretionary accruals to compensate decrease in earnings due to slowing down of their business. Firms need to convey a signal that the business can still operate and survive the crisis. The mean total CEO compensation (TCOM) consequently, also changes by 10.5% and this is significant at the 10% level. The changes though marginal, reflect the recovery from or at least stabilisation of the GFC and therefore, normality to allow for an increase in compensation.

During the crisis versus post-crisis period, changes in the discretionary accruals (DACC) for both SCG and WCG firms are significant, though at a different level. While discretionary accruals (absolute value) for WCG firms have a reduction in DACC by an average of 11% which is at \( p=0.030 \) during post-crisis period, SCG firms had an increase in DACC by 10.5% and significant at \( P=0.002 \). This suggests that in the post-crisis period, both SCG and WCG firms manage their earnings to return to the level before the crisis. In that case SCG firms increase their DACC activities while WCG firms reduce their DACC activities possibly to avoid scrutiny from monitoring bodies.

Moreover, a significantly lower ROA with a mean of 0.011 is found for SCG firms during the crisis period, in comparison to the post-crisis period which is 0.017, with \( p \) value of 0.042. On the other hand, WCG firms experience a decline in the ROA, from -0.011 to -0.019. This indicates that SCG firms perform better as the economy recovers.
from the crisis period. However, performance of WCG firms decreases even though the economy recovers from the crisis. Furthermore, leverage is found to be significantly higher during the crisis period at 27.82% in comparison to the post-crisis period of 24.12%, for the SCG firms with p-value of 0.051. The WCG firms rather have lower leverage during the period under consideration, i.e. 22.60% for the crisis period and 23.48% for the post-crisis period with p-value of 0.092.

6.3.3 Correlation Matrix

This section presents both Pearson and Spearman correlation among the variables. The correlation coefficients are checked for the presence of high collinearity among regressors. It is argued that regression analysis is sensitive to a high correlation among independent variables and may cause multicollinearity and could impair the analysis in an unfair way (Pallant, 2007). Thus it is important to, before conducting the regression analyses, control for multicollinearity in the total dataset. If two variables are correlated, it is likely that information about one variable may be used to predict the values of the other variable.

The term collinearity indicates that two predictors have a near perfect linear relationship. A relatively high level of correlation among independent variables may signal multicollinearity and is considered detrimental. The importance of detecting and reducing such a problem is that the regression model estimates of the coefficient become unstable as the level of multicollinearity increases (see Street and Bryant; 2000; Mangena and Tauringana, 2007). It is suggested that a correlation test with 0.8 or greater p-value may cause multicollinearity and therefore should be treated (Cooper and Schindler, 2008). This study employs two methods of correlation, Pearson and Spearman to test the relationship between variables. Pearson and Spearman correlation methods are
adopted to exploit the maximum benefits and also to signify the robustness of the association. For example, while Pearson is easy to compute and assumes normality in the variables, it is sensitive to outliers. Therefore, a Spearman correlation is employed as it is less sensitive to bias due to outliers. Moreover, it does not require data to be metrically scaled. Moreover, it is able to mitigate the effect of non-normality of the data. The correlation results from the two approaches, Spearman and Pearson, are reported in Table 6.6.

Table 6.6 reports no high correlation among the variables. Consequently, it does not appear to indicate a collinearity problem for interpreting the regression of the model. It is instructive to note that generally the Pearson correlation results generally agree with the Spearman correlation results and show consistency in the relationship. Based on the guidelines suggested by Cohen (1988), a significant positive relationship between the FCOM and the firm size seems to be the highest at 50% with p-value of 0.562. This could indicate that firm size may be a determinant of fixed salary as validated by other research (Chalmers, et al., 2006; Merkebi et al., 2006; Matolcsy and Wright, 2006; Coulton and Taylor, 2002; Izan et al., 1998). In effect, firm size seems to have a significant relationship with all the compensation components including the total, albeit at a different level. It also indicates a relationship exists among all the compensation components. There is evidence to suggest that CEOs who are in charge of large firms are rewarded with large salaries.

Apart from other factors like firm size, performance, growth, effectiveness of corporate governance, most of the compensation components depend on the fixed compensation and therefore, a relationship is expected. The relationship between FCOM and BCOM is predictable, as generally, bonus is a percentage dependent on FCOM. The close
relationship with a correlation of 49% is therefore not surprising. There are also correlations among the OCOM, BCOM, FCOM and TCOM, although these are weak. Another significant and relatively high correlation is between the DACC and BCOM at 40%. This suggests that discretionary accruals are likely to have a relationship with CEO bonus.
Table 6.6

Pearson (Spearman) Correlation Coefficients between Variables, for the Full Sample from 2005-2010

<table>
<thead>
<tr>
<th>Variables</th>
<th>FCOM</th>
<th>BCOM</th>
<th>OCOM</th>
<th>TCOM</th>
<th>DACC</th>
<th>Size</th>
<th>Lev</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCOM</td>
<td>1</td>
<td>0.490**</td>
<td>0.286**</td>
<td>0.182*</td>
<td>0.201*</td>
<td>0.466**</td>
<td>-0.231</td>
<td>0.097</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.003</td>
<td>0.010</td>
<td>0.036</td>
<td>0.000</td>
<td>0.059</td>
<td>0.057</td>
<td></td>
</tr>
<tr>
<td>BCOM</td>
<td>0.376**</td>
<td>1</td>
<td>0.101</td>
<td>0.221**</td>
<td>0.422**</td>
<td>0.398**</td>
<td>-0.216*</td>
<td>0.296**</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.056</td>
<td>0.006</td>
<td>0.000</td>
<td>0.000</td>
<td>0.054</td>
<td>0.009</td>
<td></td>
</tr>
<tr>
<td>OCOM</td>
<td>0.374**</td>
<td>0.011*</td>
<td>1</td>
<td>0.098*</td>
<td>0.139*</td>
<td>0.245</td>
<td>-0.128*</td>
<td>0.166</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.045</td>
<td>0.051</td>
<td>0.031</td>
<td>0.058</td>
<td>0.049</td>
<td>0.062</td>
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<tr>
<td>TCOM</td>
<td>0.180**</td>
<td>0.314*</td>
<td>0.212*</td>
<td>1</td>
<td>0.211*</td>
<td>0.254*</td>
<td>-0.192*</td>
<td>0.169</td>
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<tr>
<td></td>
<td>0.008</td>
<td>0.010</td>
<td>0.046</td>
<td>0.042</td>
<td>0.014</td>
<td>0.051</td>
<td>0.073</td>
<td></td>
</tr>
<tr>
<td>DACC</td>
<td>0.174*</td>
<td>0.403**</td>
<td>0.152*</td>
<td>0.143*</td>
<td>1</td>
<td>0.222*</td>
<td>0.196*</td>
<td>0.103</td>
</tr>
<tr>
<td></td>
<td>0.041</td>
<td>0.000</td>
<td>0.026</td>
<td>0.037</td>
<td>0.044</td>
<td>0.029</td>
<td>0.058</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>0.562**</td>
<td>0.353**</td>
<td>0.166</td>
<td>0.296**</td>
<td>0.134</td>
<td>1</td>
<td>0.106</td>
<td>0.328*</td>
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<tr>
<td></td>
<td>0.000</td>
<td>0.000</td>
<td>0.061</td>
<td>0.054</td>
<td>0.389</td>
<td>0.041</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leverage</td>
<td>-0.127</td>
<td>-0.196**</td>
<td>-0.314**</td>
<td>-0.235**</td>
<td>0.178*</td>
<td>0.052</td>
<td>1</td>
<td>-0.246*</td>
</tr>
<tr>
<td></td>
<td>0.065</td>
<td>0.004</td>
<td>0.000</td>
<td>0.019</td>
<td>0.447</td>
<td>0.095</td>
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</tr>
<tr>
<td>ROA</td>
<td>0.243</td>
<td>0.238**</td>
<td>0.134</td>
<td>0.139</td>
<td>-0.218*</td>
<td>0.282*</td>
<td>-0.153</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0.077</td>
<td>0.000</td>
<td>0.057</td>
<td>0.065</td>
<td>0.048</td>
<td>0.034</td>
<td>0.101</td>
<td></td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01% level (2-tailed).
* Correlation is significant at the 0.05% level (2-tailed)

Where: Fixed Salary= Total dollar basic salary reported by firms. Bonus= Total dollar bonus compensation reported by firms. Other= total dollar compensation paid other than fixed and bonus compensation, Total Compensation= Sum of individual components of compensation, DACC= Discretionary Accruals proxy for earnings management, Size= The natural log of Total Assets
Leverage= Financial leverage measured as the ratio of debt and equity, ROA= Return on Assets

NB: Pearson (Spearman) correlations are below (above) the diagonal line.
The relationship between DACC and other compensation components may not be high; yet it confirms a relationship as indicated by the correlation results. The other variables, leverage and return on assets, seem to have different correlation level and direction between them and the dependent variable. For example, leverage has a negative relationship with all the compensation components but some level of significance can be observed. Moreover, return on assets has significant relationships with FCOM and BCOM with probability values of 0.037 and 0.000, respectively. This indicates how fixed salary and bonus are likely to have a relationship with performance.

Even though the correlation coefficient analysis shows no high correlation, as a robustness check, it is still important to investigate further and tests for any problems with multicollinearity (Myers, 1990). Consequently, the variance inflation factors (VIF) and the tolerance level are calculated to validate the correlation. As a rule of thumb it is suggested that a VIF value of less than 10 and tolerance level of more than 0.10 is acceptable (Hair et al., 2010; Gujarati, 2009; O’Brien, 2007). The results presented in Table 6.7 indicate that none of the VIF values exceeded the critical value of 10. The VIF shows a mean of 2.543 and overall tolerance value of 0.393 (1/2.543) indicating that the VIF’s mean and the tolerance values are within acceptable levels. This test, therefore, validates the Pearson and Spearman correlation tests and suggests no serious multicollinearity problems exist.

6.4 Empirical Results

This section presents the empirical results of the three research questions formulated for this study. First, the analysis tests nine hypotheses relating to the effect of the GFC on the relationship between CEO compensation and earnings management. The second test
involves three hypotheses to further examine the moderating effect of corporate governance mechanisms on the relationship. Third, the joint effect of corporate governance and GFC on CEO compensation and earnings management relationship is tested with nine hypotheses. Multiple variables including discretionary accruals are regressed on the dependent variable, CEO compensation to determine the relationships. Therefore, a multiple regression analysis, which is one of the commonly applied techniques, is employed. This will complement the univariate analysis results to address the hypotheses developed in Chapter Four. The central questions of this thesis are: first, How does the relationship between CEO compensation and earnings management of 300 ASX firms change when compared to the Pre-Crisis / Crisis / Post-Crisis of Global Financial Crisis eras?; and second, What role does strong corporate governance play in the relationship?

The first task of the study is to examine whether or not the relationship between CEO compensation and discretionary accruals changes compared to Pre-GFC, Crisis and post-GFC. The main hypotheses developed (sub-hypotheses are discussed in Chapter Four) for the first research question are:

1. “To what extent does the relationship between CEO compensation and earnings management of ASX firms differ between the financial phases of pre-GFC, during GFC and post-GFC?”

2. “To what extent is the relationship between CEO compensation and earnings management of ASX firms moderated by the strength of corporate governance?”

3. “To what extent do financial market phases and the strength of firm’s Corporate Governance jointly affect the relationship between CEO compensation and earnings management of ASX firms?”
Each of the above hypotheses will include three measures of CEO compensation (fixed, bonus and total compensations). With regard to the above hypotheses, the null hypothesis is that there is no difference in the relationship between CEO compensation and earnings management in the three periods (Pre-Crisis, Crisis and Post-Crisis).

H0: There is no difference in the relationship between CEO compensation and earnings management for Pre-Crisis, Crisis and Post-Crisis periods of the GFC.

This study and published studies argue that there is a positive relationship between CEO compensation and earnings management. Consequently, the first step in this process is to examine the relationship between CEO compensation and earning management. The general relationship between CEO compensation components and discretionary accruals is expected to be positive. Table 6.7 reports the regression results of the relationship between CEO compensation and earnings management. The assumption stated above together with the control variables is given by Model1:

\[
CEO\text{COMP}_{it} = f(FCOM_{it}, BCOM_{it}, TCOM_{it}) = a_0 + \beta_1 DACC_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \gamma_i + \varepsilon_{it}.
\]

Table 6.7 reports the regression results for the relationship between CEO compensation and earnings management. It must be noted that this result combines both SCG and WCG firms and therefore, the real effect will be evident if the two groups are separated. Model 1 assumes no difference in the relationship of CEO compensation and earnings management from one period to another, and therefore, discretionary accrual (proxy for earnings management) is the sole regressor. It can be observed from Table 6.7 that the relationship between CEO bonus compensation and earnings management is positive and significant at the 5% level, as hypothesised. This supports the position that the
The relationship between CEO bonus compensation and earnings management in general is positive. This is consistent with the argument that tying bonus with accounting earnings which are manipulable can give managers incentive to manage earnings.

The table also shows that the association between fixed compensation and DACC is not significant. This is because earnings management is costly and managers may manage earnings only if it will transfer worth to him/her. Additionally, fixed compensation does not generally relate to accounting earnings but may be set to attract high quality executives. It may also be set based on the size of the firm and therefore its relationship with accounting earnings could be remote.

Table 6.7
Regression Results on the Relationship between CEO Compensation and Earnings Management

\[ \text{CEOComp}_{it} = f(\text{FCOM}_{it}, \text{BCOM}_{it}, \text{TCOM}_{it}) \]
\[ = \alpha_0 + \beta_1 \text{DACC}_{it} + \beta_2 \text{CONTROLS}_{it} + \gamma_i + \epsilon_{it} \]

<table>
<thead>
<tr>
<th></th>
<th>FCOM</th>
<th>BCOM</th>
<th>TCOM</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.554**</td>
<td>0.558*</td>
<td>0.544*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.047)</td>
<td>(0.027)</td>
<td>(0.034)</td>
<td></td>
</tr>
<tr>
<td>DACC</td>
<td>0.300</td>
<td>1.865**</td>
<td>1.609*</td>
<td>3.312</td>
</tr>
<tr>
<td></td>
<td>(0.178)</td>
<td>(0.041)</td>
<td>(0.064)</td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>3.01***</td>
<td>1.97*</td>
<td>0.272**</td>
<td>2.651</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.0731)</td>
<td>(0.048)</td>
<td></td>
</tr>
<tr>
<td>LEV</td>
<td>0.006</td>
<td>-0.025</td>
<td>-0.012</td>
<td>2.427</td>
</tr>
<tr>
<td></td>
<td>(0.730)</td>
<td>(-1.13)</td>
<td>(-0.28)</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.335</td>
<td>0.059</td>
<td>0.047</td>
<td>1.782</td>
</tr>
<tr>
<td></td>
<td>(0.73)</td>
<td>(0.94)</td>
<td>(0.85)</td>
<td></td>
</tr>
</tbody>
</table>

Firm Fixed Effect  Yes       Yes       Yes

# Obs.          1800       1800       1800

Adj R²          17.2%     18.9%     17.9%

F Value         14.85***  15.97***  15.14***

Mean VIF       2.543
*, **, and *** indicate statistically significant at the 10%, 5%, and 1% levels, respectively. P values are in parentheses.

Where: CEOCOMP is the level of compensation measured as bonus-based compensation (BCOM) or fixed compensation (FCOM) or total compensation (TCOM), DACC is discretionary accruals defined as the absolute value of discretionary accruals measured by Modified Jones Model (MJM), SIZE is the log of total assets, LEV refers to leverage, ROA is proxy for performance measured as return on assets, with \( \gamma \) referring to the firm-specific fixed-effects, consisting of a vector of the mean differences of all time variant variables and \( \epsilon \) is the error term.

This result indicates that managers’ incentives to manage earnings diminish when their compensation is fixed. The results further demonstrate that Total CEO Compensation, which is the aggregate of all CEO compensation components, is significant only at the 10% level. This marginal significance may be due to the fact that total compensation is made up of other components including bonus and, therefore, may partly reflect bonus and fixed component relationships.

6.4.1 Relationship between GFC, CEO Compensation and Earnings Management

The first set of nine (9) hypotheses examines whether or not the relationship between CEO compensation and earnings management in the three periods (GFC eras) differ from each other. To accomplish this, the study estimates regression Model (2) and reports the results in Table 6.8. Unlike Model 1 where the relationship is not allowed to differ, in Model (2) the study allows the coefficient of earnings management to vary with the three periods (Pre-crisis, Crisis and Post-Crisis). To do this, the study includes dummy variables P1, P2 and P3 for the Pre-crisis, Crisis-Period and Post-crisis periods, respectively. These dummy variables interact with earnings management to examine how earnings management relates to CEO compensation when interacted with periods.

It is worth mentioning that P1 (Pre-GFC) is used as the reference category while P2 (Crisis) and P3 (Post-GFC) are used as the comparison category, as the inclusion of all the three will lead to exact collinearity. The coefficients of the interaction variables, DACC*P2 and DACC*P3 indicate how the effect of discretionary accruals on
compensation in crisis and post-crisis periods are compared with the pre-crisis period. Consequently, the coefficient of the interaction terms DACC*P2 and DACC*P3 test for whether the relationship between compensation and discretionary accruals during the crisis and post-crisis periods differ from the pre-crisis period. In Model 2 the incremental effect of DACC on CEO compensation with the effect of the GFC is captured by ($\beta_1+\beta_4+\beta_5$). The study estimates the following regression model with the interaction between earnings management and GFC periods dummy (P2 and P3) for Model2:

$$ CEOCOMP_{it} = f (FCOMP_{it}, BCOMP_{it}, TCOMP_{it}) $$

$$ = a_0 + \beta_1 \cdot DACC_{it} + \beta_2 \cdot P2 + \beta_3 \cdot P3 + \beta_4 (DACC_{it} \cdot P2it) $$

$$ + \beta_5 (DACC_{it} \cdot P3it) + \beta_6 \cdot SIZE_{it} + \beta_7 \cdot LEV_{it} + \beta_8 \cdot ROA_{it} + \gamma_i + \epsilon_{it}. $$

The study takes $p<0.05$ to be the conventional significance level to examine whether or not the null hypothesis should be rejected. The null hypothesis is, “There is no difference between the relationship of CEO compensation and earnings management when compared with Pre-GFC, Crisis and Post-GFC”.

The incremental effect of P2 of DACC on fixed compensation can be found by adding the coefficients on [DACC+DACC*P2]. The coefficient on DACC is 0.023 while that of the interaction coefficient DACC*P2 is 0.061. The incremental effect of P2 is calculated as (0.023+0.061) = 0.084, an increase of 266% (0.084-0.023/0.023). Following a similar procedure to calculate the change in bonus and total compensation, there are increases of 462% and 356%, respectively. Similarly, the incremental effect of P3 of DACC on fixed compensation can be found by adding the coefficients on [DACC+DACC*P3]. The coefficient on DACC is 0.023 and that of the interactive coefficient is DACC*P3 is 0.033. The incremental effect of P3 is therefore calculated as (0.023+0.033) = 0.056, an
increase of 144% (0.056-0.023/0.023). By using a similar procedure, the study finds an increase for bonus and total compensations of 427% and 136%, respectively.

Table 6.8
Regression Results on Pre-crisis, Crisis and Post-crisis Effects on the Relationship between CEO Compensation and Earnings Management

<table>
<thead>
<tr>
<th>Indep’t Variable</th>
<th>FCOM</th>
<th>P-values</th>
<th>BCOM</th>
<th>P-values</th>
<th>TCOM</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>Coeff.</td>
<td>P</td>
<td>Coeff.</td>
<td>P</td>
<td>Coeff.</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>1.92***</td>
<td>(0.00)</td>
<td>1.56***</td>
<td>(0.001)</td>
<td>1.44***</td>
<td>(0.003)</td>
</tr>
<tr>
<td>DACC</td>
<td>0.023</td>
<td>(0.492)</td>
<td>0.425 *</td>
<td>(0.069)</td>
<td>0.16*</td>
<td>(0.074)</td>
</tr>
<tr>
<td>P2</td>
<td>0.121</td>
<td>(0.183)</td>
<td>0.682**</td>
<td>(0.026)</td>
<td>0.197*</td>
<td>(0.081)</td>
</tr>
<tr>
<td>P3</td>
<td>0.046</td>
<td>(0.203)</td>
<td>0.443**</td>
<td>(0.031)</td>
<td>0.237*</td>
<td>(0.062)</td>
</tr>
<tr>
<td>DACC*P2</td>
<td>-0.061</td>
<td>(0.129)</td>
<td>1.964**</td>
<td>(0.035)</td>
<td>0.57*</td>
<td>(0.071)</td>
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<tr>
<td>DACC*P3</td>
<td>0.033</td>
<td>(0.206)</td>
<td>1.731**</td>
<td>(0.050)</td>
<td>0.217 *</td>
<td>(0.094)</td>
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<tr>
<td>Size</td>
<td>0.29***</td>
<td>(0.007)</td>
<td>0.21**</td>
<td>(0.016)</td>
<td>0.66*</td>
<td>(0.076)</td>
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<td>LEV</td>
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<td>ROA</td>
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<td>0.32</td>
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<tr>
<td>Adj. R²</td>
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<td>51.2%</td>
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<td>F-value</td>
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<td>15.84***</td>
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<td>15.18***</td>
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</table>

*, **, and *** indicate statistically significant at the 10%, 5%, and 1% levels, respectively.

Where: FCOM is proxy for the fixed compensation; BCOM is the bonus compensation with TCOM as the total compensation. DACC is discretionary accruals a proxy for earnings management, size refers to the size of the firm measured by log of total assets, LEV refers to leverage, ROA is proxy for performance measured as return on assets, P2 (period 2) a dummy variable coded 1 if the firm year observation is during Crisis period and zero if otherwise, and P3 (period 3) a dummy variable coded 1 if the firm year observation is during Post-crisis period or otherwise zero, with \( \gamma \) referring to the firm-specific fixed-effects, consisting of a vector of the mean differences of all time variant variables and error term.

This indicates that the relationship between all three measures of CEO compensation and earnings management increased in the Crisis period (P2) by 266% for fixed compensation, 462% for bonus compensation and 356% for total compensation over the Pre-GFC. This addresses the first three hypotheses which compare the relationship...
between CEO compensation and earnings management in the Crisis Period with Pre-GFC. Similarly, there are increases Post-GFC (P3) but these are not as high as the Crisis period. The increases for fixed compensation, bonus and total compensations, respectively, are 144%, and 427% and 136%. With these findings, the hypotheses H1d-H1i can be addressed. The regression results reveal a non-significant relationship between fixed compensation and discretionary accruals. There are relatively smaller increases in the fixed compensation compared to the bonus compensation (P2-fixed compensation 266% as against bonus compensation of 462%; P3-fixed compensation 144% as against bonus compensation of 427%). This is consistent with the Gao and Shriives (2002) view that earnings management is costly; and that managers’ incentives to manage earnings diminish when their compensation is fixed.

The results in Table 6.11 reveal evidence of a positive and significant relationship between the CEO bonus compensation and earnings management in all the periods. The general positive association between CEO bonus compensation with the overall magnitude of earnings management suggests that CEOs would benefit from income increasing manipulation when such manipulation transfers wealth from stakeholders to themselves via higher bonuses. This result is supported in the literature (see Othman and Zeghal, 2006; Xie et al., 2003; Klein, 2002b; Jensen and Meckling, 1976).

The relationship between CEO total compensation is significantly related to earnings management at the 10% level during crisis period. It is obvious from the results that the relationship between CEO compensation and earnings management during the crisis period is stronger than the relationship in the pre-crisis and post-crisis periods. The positive and significant relationship of total compensation and earnings management during the crisis
period could partly be attributed to the effect of the bonus compensation. This is because fixed compensation has either a neutral or negative relationship with earnings management and because total compensation is the combination of the fixed, bonus and other compensation.

Regarding the control variables, the coefficient on LEV is consistently negative and insignificant with the exception of bonus which is significant at the 10% level across all three compensation measures. The negative coefficient on firm leverage is contrary to expectations because highly-leveraged firms are more likely to manipulate earnings upwards to avoid debt covenant violations (DeFond and Jiambalvo, 1994; Sweeney, 1994). A plausible explanation for this contrary finding may be attributed to the role played by the monitoring authority. The positive coefficient on SIZE implies that larger firms offer more compensation than smaller ones. Adjusted R2s of the models vary from 29% to 51%.

6.4. Corporate Governance, CEO Compensation and Earnings Management

The second task of this study is to address the second research question, i.e. the influence of governance on the relationship of CEO compensation and discretionary accruals. The next model therefore, includes the governance score as obtained by firms to test the moderating effect of corporate governance. The discretionary accruals adopts a positive coefficient in relation to CEO compensation (β_1 is positive). However, corporate governance is expected to retard the effect of earnings management, and consequently the coefficient of the interaction term (β_2) (interaction between earnings management and corporate governance) is expected to be negative. This is evidence that earnings
management has a positive effect on CEO compensation. However, corporate governance neutralizes the negative effect of earnings management on CEO compensation.

In order to examine whether or not the presence of a corporate governance structure influences the relationship between earnings management and CEO compensation, the study includes an additional interaction variable, the corporate governance score obtained by firms from the corporate governance index. This is done by incorporating the corporate governance variable CG in the equation. The general hypothesis for this assumption is given by:

H2: The relationship between executive compensation and earnings management is weaker for firms with stronger corporate governance mechanisms, compared to firms with weak corporate governance. Consequently, the null hypothesis is given by

H20: There is no difference between the relationship between CEO compensation and earnings management whether for strong corporate governance firms or weak corporate governance firms.

The next Model (3) tests for the moderating effect of corporate governance and hence, the following regression model is developed:

\[
CEOCOMP_{it} = f(FCOMit, BCOMit, TCOMit) \\
= a0 + \beta1DACCit + \beta2CG + b3(CGit \times DACCit) + \beta4SIZE \\
+ \beta5LEV + \beta6ROAit + \gamma i + \epsilon it
\]

Where: CG is the corporate governance score obtained by firms from the corporate governance index. The interaction effect between earnings management and corporate governance score is expected to be negative. All other variables are as explained earlier.
Model 3 includes the interaction term between earnings management and corporate governance score to show the moderating effect of corporate governance on the relationship between CEO compensation and earnings management. The introduction of the corporate governance score into the model will more likely deteriorate the effect of earnings management on CEO compensation and consequently the effect of earnings management will be negative. The model results show that the coefficient of the interaction term is negative for all components of CEO compensation and significant at the 5% and 10% level for CEO Bonus and Total compensation, respectively.

**Table 6.9**

**Panel A: Regression Results on the Relationship between CEO Compensation and Earnings Management for SCG and WCG Firms (run separately)**

<table>
<thead>
<tr>
<th>DV=CEOCOM</th>
<th>Strong Corporate Governance firms</th>
<th>Weak Corporate Governance Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FCOM</td>
<td>BCOM</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.322</td>
<td>0.241*</td>
</tr>
<tr>
<td></td>
<td>(214)</td>
<td>(0.181)</td>
</tr>
<tr>
<td>DACC</td>
<td>-0.20</td>
<td>-0.34**</td>
</tr>
<tr>
<td></td>
<td>(0.75)</td>
<td>(0.046)</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.191*</td>
<td>0.46**</td>
</tr>
<tr>
<td></td>
<td>(0.071)</td>
<td>(0.024)</td>
</tr>
<tr>
<td>LEV</td>
<td>0.14*</td>
<td>-1.18*</td>
</tr>
<tr>
<td></td>
<td>(0.076)</td>
<td>(0.073)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.338</td>
<td>0.072*</td>
</tr>
<tr>
<td></td>
<td>(0.67)</td>
<td>(1.50)</td>
</tr>
<tr>
<td># Obs.</td>
<td>240</td>
<td>240</td>
</tr>
<tr>
<td>Adj R²</td>
<td>15.9%</td>
<td>16.35%</td>
</tr>
<tr>
<td>F Value</td>
<td>12.024</td>
<td>13.294</td>
</tr>
</tbody>
</table>

*, **, and *** indicate statistically significant at the 10%, 5%, and 1% levels, respectively.
Panel B: Regression Results on the Relationship between CEO Compensation and Earnings management with the Moderating Effect of Corporate Governance (using CGScore)

<table>
<thead>
<tr>
<th>IV</th>
<th>Coeff.</th>
<th>P-Values</th>
<th>Coeff.</th>
<th>P-Values</th>
<th>Coeff.</th>
<th>P-Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.92***</td>
<td>(0.00)</td>
<td>1.56***</td>
<td>(0.182)</td>
<td>1.44***</td>
<td>(0.153)</td>
</tr>
<tr>
<td>DACC</td>
<td>0.13</td>
<td>(0.12)</td>
<td>0.14**</td>
<td>(0.166)</td>
<td>0.16*</td>
<td>(0.024)</td>
</tr>
<tr>
<td>CG</td>
<td>-0.008</td>
<td>(0.224)</td>
<td>-1.867**</td>
<td>(0.050)</td>
<td>-0.891</td>
<td>(0.57)</td>
</tr>
<tr>
<td>DACC*CG</td>
<td>-0.09</td>
<td>(0.13)</td>
<td>-0.15**</td>
<td>(0.047)</td>
<td>-1.07*</td>
<td>(0.094)</td>
</tr>
<tr>
<td>Size</td>
<td>0.29***</td>
<td>(0.009)</td>
<td>0.21**</td>
<td>(0.016)</td>
<td>0.66*</td>
<td>(0.056)</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.03</td>
<td>(0.158)</td>
<td>-0.06</td>
<td>(0.249)</td>
<td>-0.05</td>
<td>(0.137)</td>
</tr>
<tr>
<td>ROA</td>
<td>0.29*</td>
<td>(0.082)</td>
<td>0.69**</td>
<td>(0.041)</td>
<td>0.32</td>
<td>(0.11)</td>
</tr>
<tr>
<td>Fixed Effect</td>
<td>YES</td>
<td></td>
<td>YES</td>
<td></td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Adj. R²</td>
<td>20%</td>
<td></td>
<td>48.62%</td>
<td></td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>F-value</td>
<td>14.49</td>
<td></td>
<td>13.82</td>
<td></td>
<td>12.20</td>
<td></td>
</tr>
<tr>
<td># Obs.</td>
<td>1800</td>
<td></td>
<td>1800</td>
<td></td>
<td>1800</td>
<td></td>
</tr>
</tbody>
</table>

*, **, and *** indicate statistically significant at the 10%, 5%, and 1% levels, respectively.

Panel A of Table 6.9 unlike Table 6.7 reports the results of the relationship between CEO compensation and earnings management into separate corporate governance groups. The results show that the relationship between CEO compensation and earnings management is generally negative for SCG firms. This is evident according to the coefficients of discretionary accruals for SCG firms which are -0.20, -0.34 and -0.17 for fixed, bonus and total compensation, respectively. On the other hand, the results show a positive relationship for WCG firms, with coefficients of 0.024, 0.28 and 0.015 for compensation components. This suggests that good corporate governance mechanisms have a differential impact on the relationship between CEO compensation and earnings management.
Panel B of Table 6.9 combines all firms and interact corporate governance score with discretionary accruals (DACC). The results are consistent with Panel A results as the coefficient of the interaction term ($\beta_2$) is negative, thus indicating the restraining power of corporate governance on earning management. This means that the firm with a higher CG score will have a less positive relationship between CEO compensation and earnings management. In other words, for firms with a higher CG score, the relationship between CEO compensation and earnings management will be less positive than those with a lower CG score. The results confirm corporate governance mechanisms serve as monitoring tools that mitigate the effects of earnings management on CEO compensation.

Even though the results show that corporate governance score affects the relationship between CEO compensation and earnings management, the general concern may not be the level of firm corporate governance as a continuous measurement but rather whether firms are classified in terms of strong (good) or weak (bad) governance. Therefore, another way to examine whether corporate governance has different level of effect on the relationship is to use discrete measurement for corporate governance. This study categorises firm into two groups based on the median. Firms having a CGScore above the median are classified as Strong (Good) Governance firms, whereas firms with a CG score less than the median are classified as Weak (bad) Governance Firms. The study includes a dummy variable of 1 for strong corporate governance firms (SCG) instead of CGScore in Model 4, to examine the moderating effect of corporate governance. In this model the incremental effect of DACC on CEO compensation is captured by ($\beta_1 + \beta_2$). For this purpose, the following model is developed.

$$CEOCOMP_{it} = f(FCOM_{it}, BCOM_{it}, TCOM_{it}) = a0 + \beta_1 DACC_{it} + \beta_2 (SCG_{it} * DACC_{it}) + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 ROA_{it} + \gamma_i + \epsilon_{it}$$
Where: all variables as explained in the previous model and SCG is corporate governance
dummy variable equal to 1 if a firm is in the strong corporate firms’ group, = 0 otherwise.

Table 6.10
Regression Results on the Effect of Strong Corporate Governance on the
Relationship between CEO Compensation and Earnings Management

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>FCOM</th>
<th>BCOM</th>
<th>TCOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV=CEOCOMP</td>
<td>Coef.</td>
<td>P-values</td>
<td>Coef.</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.92*** (0.00)</td>
<td>1.56*** (0.182)</td>
<td>1.44*** (0.153)</td>
</tr>
<tr>
<td>DACC</td>
<td>0.15 (0.18)</td>
<td>0.19** (0.079)</td>
<td>0.09* (0.044)</td>
</tr>
<tr>
<td>SCG</td>
<td>-0.021 (0.211)</td>
<td>-0.391* (0.082)</td>
<td>0.109* (0.079)</td>
</tr>
<tr>
<td>DACC*SCG</td>
<td>-0.21 (0.19)</td>
<td>-0.09*** (0.005)</td>
<td>-0.008* (0.057)</td>
</tr>
<tr>
<td>Size</td>
<td>0.049*** (0.008)</td>
<td>0.63** (0.025)</td>
<td>0.252* (0.063)</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.356 (0.212)</td>
<td>-0.06 (0.192)</td>
<td>-0.05* (0.071)</td>
</tr>
<tr>
<td>ROA</td>
<td>0.31 (0.12)</td>
<td>0.141* (0.071)</td>
<td>0.32 (0.192)</td>
</tr>
<tr>
<td>Fixed Effect</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>28%</td>
<td>57.12%</td>
<td>29%</td>
</tr>
<tr>
<td>F-value</td>
<td>12.19</td>
<td>13.11</td>
<td>12.42</td>
</tr>
<tr>
<td># Obs.</td>
<td>1800</td>
<td>1800</td>
<td>1800</td>
</tr>
</tbody>
</table>

*, **, and *** indicate statistically significant at the 10%, 5%, and 1% levels, respectively.

NB: The above results are derived using dummy variable for SCG as SCG=1, if a firm is in strong
corporate governance group and zero if otherwise.

The coefficient of the interaction term (β2) can be interpreted as the difference between
Strong Corporate Governance firms (SCG) and WCG firms (WCG) in the relationship
between their CEO compensation and earnings management. This coefficient is expected
to be negative and show that the effect of earnings management on CEO compensation is
less positive (or even negative) for SCG firms.

The results as expected confirm that the coefficient of the interaction term is negative for
all CEO compensation components and significant at the convention level of 1% and 10%
for CEO bonus and total compensations. In other words, for firms with a higher CG score,
earnings management will depreciate CEO compensation less than those with a lower CGscore. The result is consistent with earlier ones shown in Table 6.9 Panel A, where the coefficient of earnings management is positive while the coefficient of interaction term is negative and significant. This means that the negative effect of earnings management is less for firms in the high-CG group. The overall regression results provide evidence that managers of WCG firms employ earnings management techniques to influence their compensation. This finding is consistent with Holthausen et al. (1995) and Guidry et al. (1999) who find that managers engage in earnings management via discretionary accruals to inflate reported income.

6.4.3 Joint Effect of Corporate Governance and GFC on CEO Compensation and Earnings Management Relationship

The study further tests for the joint effects of the Global Financial Crisis and corporate governance on the relationship between executive compensation and earnings management. Consequently, to examine whether the association between CEO compensation and earnings management changes with corporate governance and GFC eras, the study merges Models 2 and 4 into a single model which this study calls the “super-full model”. The coefficients of DACC*P2 and DACC*P3 (β4 and β5) capture the effect of the GFC and Post-GFC on the relationship between CEO compensation and earnings management. Crisis and Post-GFC periods are expected to differ from the pre-crisis period. The coefficient β6 captures the effect of corporate governance on the relationship while β8 and β9 captures capture the moderating effect of corporate governance on the relationship in the Crisis and Post-Crisis periods, respectively. The Model 5 is developed as follows:
\[\text{CEOCOMPit} = f(FCOMit, BCOMit, TCOMit) = a0 + \beta1DACCit + \beta2 * P2 + \beta3 * P3 + \beta4(DACCit * P2it) + \beta5(DACCit * P3it) + \beta6 * SCG + \beta7(SCGit * DACCit) + \beta8(SCGit * DACCit * P2it) + \beta9(SCGit * DACCit * P3it) + \beta10 * SIZEit + \beta11 * LEVit + \beta12 * ROAit + \gamma_i + \epsilon_{it}\]

Where: all variables are as defined in the previous models.

Table 6.11 reports the panel data regression results of the joint effect of the GFC and corporate governance on the relationship between CEO compensation and earnings management. The results showed in Table 6.11 address the set of nine (9) hypotheses (H3a to H3i) under Research Question 3, “What is the joint effect of the GFC and Corporate Governance on the relationship between CEO compensation and earnings management of 300 ASX firms?” Table 6.11 also presents comprehensive results consistent with those already presented in this study. The intent of these results is consistent with studies by Barton (2001) and Hunt et al. (1996) who argue that CEOs who manipulate earnings in one period are inclined to manage earnings in subsequent periods.

In estimating hypotheses for research question 3, this study also states the null hypothesis which is that “None of the interaction variables has any effect in either the period or the corporate governance dimensions. That is, \(\beta4 = \beta5 = \beta7 = \beta8 = \beta9 = 0\) for the Model 5is rejected, indicating that none of the additional coefficients are non-zero. As the hypothesis predicts that the impact of SCG reduces the effect of earnings management it is expected that \(\beta6, \beta7, \beta8\) and \(\beta9\) all denote negative values. This outcome presents an interesting scenario with the coefficient of corporate governance variable being consistently negative.
Table 6.11
Regression Results on the Joint Effects of the GFC and SCG on Executive Compensation and Earnings Management

<table>
<thead>
<tr>
<th>DV=CEOCOMP</th>
<th>FCOM</th>
<th>BCOM</th>
<th>TCOM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variables</strong></td>
<td><strong>Coeff.</strong></td>
<td><strong>P-values</strong></td>
<td><strong>Coeff.</strong></td>
</tr>
<tr>
<td>Intercept</td>
<td>1.44***</td>
<td>(0.00)</td>
<td>1.32***</td>
</tr>
<tr>
<td>DACC</td>
<td>0.011</td>
<td>(0.465)</td>
<td>0.38**</td>
</tr>
<tr>
<td>P2</td>
<td>0.118</td>
<td>(0.016)</td>
<td>0.123**</td>
</tr>
<tr>
<td>P3</td>
<td>0.059</td>
<td>(0.017)</td>
<td>0.356**</td>
</tr>
<tr>
<td>DACC*P2</td>
<td>-0.41</td>
<td>(0.012)</td>
<td>1.608**</td>
</tr>
<tr>
<td>DACC*P3</td>
<td>0.18</td>
<td>(0.019)</td>
<td>1.22***</td>
</tr>
<tr>
<td>SCG</td>
<td>-0.015*</td>
<td>(0.092)</td>
<td>-0.257**</td>
</tr>
<tr>
<td>DACC*SCG</td>
<td>-0.45</td>
<td>(0.182)</td>
<td>-0.34***</td>
</tr>
<tr>
<td>DACC<em>SCG</em>P2</td>
<td>-0.62*</td>
<td>(0.024)</td>
<td>-0.89**</td>
</tr>
<tr>
<td>DACC<em>SCG</em>P3</td>
<td>-1.72</td>
<td>(0.163)</td>
<td>-1.15*</td>
</tr>
<tr>
<td>Size</td>
<td>0.52***</td>
<td>(0.00)</td>
<td>0.096**</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.12</td>
<td>(0.257)</td>
<td>-0.079</td>
</tr>
<tr>
<td>ROA</td>
<td>0.092</td>
<td>(0.271)</td>
<td>0.410*</td>
</tr>
<tr>
<td>Fixed Effect</td>
<td>YES</td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>26%</td>
<td></td>
<td>49.42%</td>
</tr>
<tr>
<td>F-value</td>
<td>15.66</td>
<td></td>
<td>15.96</td>
</tr>
<tr>
<td># Obs.</td>
<td>1800</td>
<td></td>
<td>1800</td>
</tr>
</tbody>
</table>

*, **, and *** indicate statistically significant at the 10%, 5%, and 1% levels, respectively.

Where: FCOM is proxy for the fixed compensation; BCOM is the bonus compensation with TCOM as the total compensation. DACC is discretionary accruals a proxy for earnings management, size refers to the size of the firm measured by log of total assets, LEV refers to leverage, ROA is proxy for performance measured as return on assets, P2 (period 2) a dummy variable coded 1 if the firm year observation is during Crisis period and zero if otherwise, and P3 (period 3) a dummy variable coded 1 if the firm year observation is during the Post-crisis period or otherwise zero, with \( \gamma \) referring to the firm-specific fixed-effects, consisting of a vector of the mean differences of all time variant variables and error term.
It can be inferred from the results that relationships vary from one period to another depending on CEO compensation component. The coefficients $\beta_8$ and $\beta_9$ are consistently negative, indicating that SCG has the ability to restrain the negative effect of earnings management on CEO compensation; however, the level of restraint varies, depending on the period and also the compensation component. The negative coefficients signify a reduction in the power of the relationship of CEO compensation and earnings management.

It is observed from Table 6.11 that the interaction term DACC*P2 (earnings management in crisis period) is negative for CEO fixed compensation (-0.41) and 1.608 and 0.066 for CEO bonus and total compensation, respectively. However, when interacting with SCG (DACC*SCG*P2), it further reduced the effect of fixed compensation to -0.62, bonus to -0.89 and -0.28 for total compensation. Similarly, the coefficient of DACC*P3 (Post-GFC) reduces from 0.18 to -1.72 for fixed compensation, when the corporate governance variable interacts with the DACC. CEO bonus and total compensation equally decrease from 1.22 to -1.15 and 0.029 to -0.317, respectively. These changes indicate that corporate governance moderates the relationship between CEO compensation and earnings management from period to period.

Differences also emerge in the relationship between CEO compensation and earnings management from one period to another. For example, in the Crisis-Period (P2) the coefficient of DACC on CEO fixed compensation is -0.41. When interacts with SCG, the strength changes to -0.62. The coefficients on DACC for the CEO compensation measures (fixed, bonus and total) in the Pre-GFC and Crisis period are, -0.41 and 1.03 [-0.41 + (-0.62), 1.608 and 0.718, 0.066 and -0.214, respectively. Thus, the magnitude of
change for fixed compensation is $-1.51 \ [(1.03-0.41)/-0.41)]$. Following a similar procedure, the magnitude of change for CEO bonus and total compensations during the Crisis Period are $-0.554$ and $-4.24$, respectively. Similarly, the magnitude of change for CEO fixed, bonus and total compensations Post-Crisis Period are $-9.56$, $-0.94$ and $-10.9$, respectively. Moreover, the various coefficients of the interaction terms are used to determine the relationship differences between periods. For example the coefficient of DACC*SCG*P2 for CEO fixed compensation is $-0.62$ but that of DACC*SCG*P3 is $-1.72$, which means that the relationship between CEO fixed compensation and earnings management during the crisis period is stronger than the Post-Crisis period. It can be concluded that this procedure addresses hypotheses H3a to H3i.

6.5 Further Analyses and Robustness Checks

This study conducts additional analyses as a quality assurance strategy to verify the correctness of tests and ascertain the robustness of the evidence. It is argued that employing multiple approaches helps ensure robust results better than using only one method (Cooke, 1989). Consequently, in pursuit for robust results this study employs certain specifications to mitigate the impact of measurement errors on the regression results by dealing with normality, multicollinearity, heterocedasticity issues (Pallant, 2007) in previous sections. Additionally, the study conducts a sensitivity analysis in addition to the primary analysis. Although not reported in detail the main results remain unchanged after these robustness tests.

6.5.1 Alternative Measures of Variables

In addition to the above approaches, the study conducts another check by replicating the results in Table 6.9, replacing the earnings management measure with yet another
alternative measurement of earnings management for robustness test. In the earnings management literature, it is commonly believed that accruals provide management with company managers to alter earnings. Therefore, abnormal accruals are used as an empirical indicator of earnings management (see Bowman and Navissi, 2003; Batov et al., 2001; Dechow et al., 1995; DeFond and Jimbalvo, 1994; Boynton et al., 1992; Jones, 1991). While several alternative measures of earnings management exist, for reasons of space, the study discusses using Kothari et al. (2005) below.

6.5.1.1 Kothari et al.’s (2005) Performance Matched Accruals Model

It is observed that a problem concerning potential effects of the correlation may exist between discretionary accruals and the return on assets (ROA) in the modified Jones model. For this reason Kothari et al. (2005) proposed a measurement that adjusts the discretionary accruals to remove a potentially serious measurement error. In order to overcome the problem Kothari et al. (2005) propose a model that includes an intercept and control for the firm’s performance using the lag of return on assets (ROA) to mitigate the problematic heteroscedasticity and misspecification issues of the modified Jones model in estimating accruals. Kothari et al. (2005) suggest including the return on assets of the previous year (ROA) as an additional regressor to the cross-sectional modified Jones model. Thus, the discretionary accruals will be estimated by the residuals of the following model:

\[
TAC_{it} = \alpha \left( \frac{1}{TA_{it} - 1} \right) + \beta 1 \left( \Delta REV_{it} - \Delta REC_{it} \right) / TA_{it} - 1 + \beta 2 \left( \frac{PPE_{it}}{TA_{it} - 1} \right) + \beta 3 ROA_{it} - 1 + \epsilon_{it}
\]

Where:  
TAC \( it \) is total accruals, TA \( it -1 \) is the book value of total assets of firm \( i \) at the end of year \( t -1 \),  
\( \Delta REV_{it} / TA_{it} - 1 \) is sales revenues of firm \( i \) in year \( t \) less revenues in year \( t -1 \) scaled by TA \( it -1 \), PPE \( it / TA it -1 \) is gross property, plant and equipment of firm \( i \) at the end of \( t -1 \).
Employing the Kothari et al., (2005) model to estimate DACC as a robustness check has produced essentially similar results pertaining to those reported in Table 6.11. This implies that the result of the study is robust. Following Ashbaugh et al. (2003) and Gul et al. (2006), this study partitions the sample into strong and weak corporate governance groups and runs separate regressions for each partition (strong and weak corporate governance groups for each period). This does not only allow the coefficients on the DACC and control variables to vary, it compares and contrasts (Agarwal, Chomsisengphet, Liu and Rhee, 2006), but also provide evidence on whether or not there is: firstly, any differential relationship between compensation and discretionary accruals; and secondly, whether they are conditional on strong or weak corporate governance and the GFC. This result is consistent with those reported in Table 6.11. The results of this approach are reported in Table 6.12.

The results provided in Table 6.12 which uses the Kothari et al. (2005) measure of discretionary accruals is consistent with the modified Jones model. The effect of corporate governance strength and the three unique GFC periods on the relationship of CEO compensation and earnings management are also examined by this measurement. Consequently DACC*CG*P2 (crisis period takes on a dummy variable 1 while other periods take on zero) and DACC*CG*P3 (when post-crisis period takes on 1, and all others are zero) are included to examine these effects on GFC and corporate governance. Again these are compared to the reference category, pre-crisis (P1) and strong corporate governance (WCG). It must be pointed out that a positive coefficient of the comparison category (DACC*CG*P2 and DACC*CG*P3) indicates a higher relationship than the
reference category (P1 and SCG). In this way the differences are established. The results indicate discretionary accruals in the presence of weak corporate governance during the crisis period have a significantly positive relationship with CEO bonus compensation at the 1% level.

This suggests that during the crisis period weak corporate governance firms engaged in earnings management to influence their compensation. Weak corporate governance structures are not able to mitigate the negative effect of earnings management on bonus compensation during the crisis period. Furthermore the relationship between bonus compensation and earnings management during the crisis period was stronger than the pre-crisis period, hence supporting the hypothesis.

The relationship between CEO total compensation and earnings management during the crisis period in the presence of weak corporate governance shows a stronger relationship than the pre-crisis period, but non-significant. This may reflect a significant positive increase in bonus compensation as a component of total compensation. The relationship between the earnings management and the total compensation during the crisis period also indicates the inability of weak corporate governance structures to mitigate the negative effect of earnings management. The relationship between earnings management and total compensation, however, may not be a direct one. This takes the view that total compensation is the addition of fixed, bonus and other forms of compensation. Each of these components may also have different determinants. Although Australian CEOs are mainly remunerated by fixed salaries, executives still want to improve incentive payment so as to improve total compensation level. This is based on the notion that CEOs opportunistically engage in earnings management to inflate compensation.
<table>
<thead>
<tr>
<th>IV</th>
<th>E/ Signs</th>
<th>FCOM Coef.</th>
<th>BCOM Coef.</th>
<th>TCOM Coef.</th>
<th>FCOM Coef.</th>
<th>BCOM Coef.</th>
<th>TCOM Coef.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.44***</td>
<td>1.32***</td>
<td>1.51***</td>
<td>1.77***</td>
<td>1.56***</td>
<td>1.87***</td>
<td></td>
</tr>
<tr>
<td>DACC</td>
<td>0.11</td>
<td>0.38**</td>
<td>0.018*</td>
<td>0.009</td>
<td>0.291**</td>
<td>0.180*</td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>0.118</td>
<td>0.123**</td>
<td>0.162*</td>
<td>0.200</td>
<td>0.218**</td>
<td>0.101*</td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td>0.059</td>
<td>0.356**</td>
<td>0.145*</td>
<td>0.092</td>
<td>1.13**</td>
<td>0.098*</td>
<td></td>
</tr>
<tr>
<td>DACC*P2</td>
<td>-0.41</td>
<td>1.608**</td>
<td>0.066*</td>
<td>0.05</td>
<td>0.35**</td>
<td>0.024*</td>
<td></td>
</tr>
<tr>
<td>DACC*P3</td>
<td>0.18</td>
<td>1.22**</td>
<td>0.029*</td>
<td>0.116</td>
<td>0.094*</td>
<td>0.017</td>
<td></td>
</tr>
<tr>
<td>SCG</td>
<td>-0.015*</td>
<td>-0.257**</td>
<td>-0.131*</td>
<td>-0.142</td>
<td>-0.189</td>
<td>-0.089</td>
<td></td>
</tr>
<tr>
<td>DACC*SCG</td>
<td>-0.45</td>
<td>-0.34***</td>
<td>-0.139*</td>
<td>-0.133</td>
<td>-0.612**</td>
<td>-0.142</td>
<td></td>
</tr>
<tr>
<td>DACC<em>SCG</em>P2</td>
<td>-0.62*</td>
<td>-0.89***</td>
<td>-0.28</td>
<td>-0.051</td>
<td>-0.473**</td>
<td>-0.099</td>
<td></td>
</tr>
<tr>
<td>DACC<em>SCG</em>P3</td>
<td>-1.72</td>
<td>-1.15*</td>
<td>-0.032</td>
<td>-0.016</td>
<td>-0.181*</td>
<td>-0.044</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>0.52***</td>
<td>0.096**</td>
<td>0.841*</td>
<td>0.617**</td>
<td>0.137**</td>
<td>0.647</td>
<td></td>
</tr>
<tr>
<td>LEV</td>
<td>-0.12</td>
<td>-0.079</td>
<td>-0.081</td>
<td>-0.069</td>
<td>-0.069</td>
<td>-0.142</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.092</td>
<td>0.410*</td>
<td>0.512</td>
<td>0.218</td>
<td>0.052</td>
<td>0.467</td>
<td></td>
</tr>
<tr>
<td>Fixed Effect</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Adj. R²</td>
<td>26%</td>
<td>49.42%</td>
<td>31%</td>
<td>26%</td>
<td>49.42%</td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td># Obs.</td>
<td>1800</td>
<td>1800</td>
<td>1800</td>
<td>1800</td>
<td>1800</td>
<td>1800</td>
<td></td>
</tr>
</tbody>
</table>

* **, and *** indicate statistically significant at the 10%, 5%, and 1% levels, respectively.
Where: FCOM is proxy for the fixed compensation; BCOM is the bonus compensation with TCOM as the total compensation. DACC is discretionary accruals proxy for earnings management, size refers to the size of the firm measured by log of total assets, LEV refers to leverage, ROA is proxy for performance measured as return on assets, P2 (period 2) a dummy variable coded 1 if the firm year observation is during Crisis period and zero if otherwise, and P3 (period 3) a dummy variable coded 1 if the firm year observation is during Post-crisis period or otherwise zero, with γ referring to the firm-specific fixed-effects, consisting of a vector of the mean differences of all time variant variables and error term.
According to the results, the relationship between earnings management and fixed compensation has a positive coefficient of 0.11 and is significant at the 10% level. It shows that the relationship in the crisis-period, however, is stronger than the relationship in the pre-crisis period. It is generally difficult to explain the relationship between fixed compensation and earnings management. Unlike bonus compensation and to some extent the total compensation, fixed compensation is not expected to increase as a result of an increase in earnings management. A potential explanation for the positive relationship between compensation and earnings management is evidence of managerial opportunism.

The post-crisis period analysis demonstrates the effect of weak corporate governance on CEO compensation. It is expected that after the crisis, there will be stability and growth in the firms and better monitoring of CEOs’ behaviour. As expected, the relationship between earnings management and fixed compensation on one hand and total compensation on the other are not significant, yet they are positive and stronger than a similar relationship during the pre-crisis period. The results still indicate some level of relationship between bonus compensation and earnings management and during the post-crisis phase. A possible reason for a marginal increase in bonus during post-crisis could be due to an increase in earnings management. It may also be due to a reduction in total compensation potentially resulting from reduced other compensation components including options/shares. Furthermore, the results point to the shortcomings of weak corporate governance firms’ ability to mitigate the effect of earnings management on CEOs bonus compensation. Conversely, the association between CEO bonus compensation and earnings management compromises the strength of corporate governance.
6.5.2 Adjusted R Square

The adjusted R square is a statistical term that shows how good one variable is at predicting another. A low adjusted R-square may suggest that no clear evidence exists to support earnings management is a significant factor that determines the CEO compensation, nor that earnings management may not be a strong indicator in reflecting total compensation. It must, however, be noted that different incentives may provide different compensation components and thus dilute the effects of earnings management on CEO compensation. The empirical results of this study’s regression analyses yield adjusted R square values between 10.27% in Table 9, Panel A to 57.12% in Table 10. These values are consistent with other analyses (see Cadman et al., 2009; Chalmers et al., 2006; Firth et al., 1999), that also examine corporate governance studies, executive compensation practices, and have similar values. The R-square values in this study are rather common and should therefore not be interpreted as worrying, as regression output does not solely depend on R square values.

6.5.3 The Endogeneity Problem

It is argued that corporate governance studies have examined the potential problem of endogeneity (see McKnight and Weir, 2009; Bhagat and Bolton, 2008; Larcker and Rusticus, 2008; Coles et al., 2008; McMeeking et al., 2006; Klapper and Love, 2003; Black et al., 2003). Generally, a loop of causality between the independent and dependent variables of a model leads to endogeneity (Hill et al., 2010). The endogenous nature of some variables in a regression can be due to omitted variables and measurement errors (Bhagat and Bolton, 2008). Moreover, endogeneity in corporate governance studies and indeed compensation studies may also be caused by reverse causality (Green, 2008). The problem may be solved by conducting lagged regressions where the independent
variables of t-1 explain the dependent variable of t to solve this problem. The instrumental variables approach can also be used to solve this endogeneity issue (Chen et al., 2011).

The endogeneity of executive compensation has always been an issue in studies on the economic consequences of executive compensation. This research therefore, may not be immune to endogeneity and may have suffered from reverse causality. That is to say, does a CEO compensation contract induce strong incentives for earnings management or earnings management rather than lead to higher compensation? In the context of this study, the endogeneity problem arises if higher compensation leads to management discretionary behaviour.

This study made an attempt to address endogeneity in the model and subsequent results in Table 6.9 by estimating the firm fixed effects regression to address the omitted variable issues. The study further conducts a number of additional robustness tests to address the endogeneity concern. First, the study conducts the Hausman (1978) specification test for CEO compensation equations. The Hausman test helps to determine possible endogeneity problems existing in a regression model. In the Hausman test, the predicted errors of each independent variable are determined. The independent variables are referred to as endogenous if the significant level is less than 5 per cent, while variables are implied to be exogenous if the significant level is greater than 5 per cent. For endogenous variables a further test is executed to determine the level of significance. If the significance level is more than 5 per cent, it suggests that the variable has no endogeneity problem.
The results of the Hausman specification test for CEO compensation equations (though not tabulated here) are that all the test variables used in the models are exogenous except for the variables of the discretionary accruals (DACC). This is endogenous to CEO bonus compensation (BCOM). The results, therefore, suggest that the level of CEO bonus compensation and discretionary accruals are jointly determined. That is to say, the results of the Hausman test for endogeneity suggest that bonus-based compensation is endogenous to the extent of earnings management. There is no evidence at least from the results, however, that discretionary accruals and other components of compensation (fixed and total compensations) are jointly determined.

In general, these results provide partial support for the endogeneity hypothesis since not all CEO compensation components are endogenous to the extent of earnings management. This confirms the importance of considering the endogenous nature of earnings management and compensation (Fields et al., 2001). In order to examine the level of significance of the endogenous variables, Two-stage-least-square (2SLS) regression is conducted. The results of the 2SLS show that only the coefficient of the discretionary accruals in the CEO bonus compensation (BCOM) model is statistically significant at 5.268 (p-value 0.0016). Table 6.11 presents the t-statistic results and significance level for the variables used in this study.
### Table 6.13

#### Endogeneity Test

<table>
<thead>
<tr>
<th>Variables</th>
<th>FCOM</th>
<th></th>
<th>BCOM</th>
<th></th>
<th>TCOM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DACC</td>
<td>0.682</td>
<td>0.923</td>
<td>5.268</td>
<td>0.016**</td>
<td>3.438</td>
<td>0.081*</td>
</tr>
<tr>
<td>SIZE</td>
<td>6.481</td>
<td>0.092*</td>
<td>2.481</td>
<td>0.115</td>
<td>0.533</td>
<td>0.075*</td>
</tr>
<tr>
<td>LEV</td>
<td>0.758</td>
<td>0.375</td>
<td>0.050</td>
<td>0.822</td>
<td>0.758</td>
<td>0.384</td>
</tr>
<tr>
<td>ROA</td>
<td>0.533</td>
<td>0.398</td>
<td>3.160</td>
<td>0.075</td>
<td>0.533</td>
<td>0.465</td>
</tr>
</tbody>
</table>

**significant at 5% level.

Where: DACC = absolute value of discretionary accruals from the modified Jones model a proxy for earnings management; FCOM is proxy for the fixed compensation, BCOM is the bonus compensation, TCOM is the total compensation, size refers to the size of the firm measured by log of total assets, LEV refers to leverage, and ROA is proxy for performance measured as return on assets.

#### 6.6 Conclusion

This chapter reports the results of the various tests conducted to provide empirical evidence in response to the primary questions: firstly, “To what extent does the relationship between CEO compensation and earnings management of ASX firms differ between the financial phases of Pre-GFC, during GFC and Post-Global Financial Crisis?”; and secondly, “What role does the strength of firm’s corporate governance play in the relationship? ” The chapter discussed the empirical findings on the effect of distinct economic periods (GFC) on the association between earnings management and CEO compensation. Specifically, it looked at these relationships before, during and after the GFC. It also examined the role corporate governance plays in the relationship when comparing the pre-crisis, crisis and post-crisis periods. Prior studies on the relationship between earnings management and compensation were referred to, but it also extended the literature by examining the relationship between the impact of the GFC and the moderating role of corporate governance.
The results from the panel data fixed effect regression show that the relationship between compensation and earnings management changed compared with the pre-crisis, crisis and post-crisis periods. The results also provide strong evidence that the earning management behaviour influences components of CEO compensation at different levels depending on the strength of corporate governance and economic situation (GFC). This study’s major findings show a significant positive association between earnings management and CEO bonus compensation for WCG firms during the crisis period. This finding is consistent with Gao and Shriever (2002) and Anderson et al. (2000) who posit that bonus compensation is positively and significantly related to discretionary accruals. The results provide statistical evidence of no association between earnings management and CEO fixed compensation during pre- and post-crisis periods for both SCG and WCG firms. This finding is consistent with the argument that managers may not engage in earnings management in the absence of expected self-benefits.

Finally, the results show that the association between CEO bonus compensation and earnings management decreases when corporate governance is strong. The stronger (weaker) the CG quality the more (less) negative is the relationship between CEO compensation and earnings management. Moreover, CEO bonus compensation is influenced, at least, partially, by earnings management behaviour in the presence of a weak corporate governance structure. Specifically, the use of discretionary accruals increases CEOs’ bonus compensation for weak corporate governance firms. It is implied that the relationship between compensation and earnings management varies depending on the strength of the corporate governance and the state of the economy. The results in this study provide evidence supporting the role of corporate governance in reducing
harmful earnings management. The evidence in this research shows that the effect of earnings management on CEO compensation is less negative for good governance firms. Firms with poor governance face the negative effect of earnings management on CEO compensation because these firms are more vulnerable to managerial opportunism.

The results are robust to a battery of sensitivity tests, including those that account for endogeneity between CEO compensation and earnings management. In sum these findings imply that while strong corporate governance appears to mitigate earnings management and by inference CEO bonus compensation, it has little or no impact on fixed and total compensation since no significant relationships are found between them. However, weak governance does not appear to reduce the tendency of CEOs to use discretionary accruals to influence their bonus. These findings are consistent with the hypothesis that earnings management relationship with compensation is stronger (weaker) as corporate governance strength decreases (increases). The summary of results is provided in Table 6.14. The next chapter concludes the thesis and outlines some policy implications.

<table>
<thead>
<tr>
<th>Table 6.14</th>
<th>Summary of Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question 1: How Does the GFC Change the Relationship between CEO Compensation and Earnings Management of 300 ASX firms when Compared to the Pre- and</td>
<td></td>
</tr>
<tr>
<td>Research Hypotheses</td>
<td>Results</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>H1a The relationship between CEO fixed compensation and earnings management is</td>
<td>Not supported</td>
</tr>
<tr>
<td>stronger for ASX firms during the GFC period compared to the pre-crisis period.</td>
<td></td>
</tr>
<tr>
<td>H1b The relationship between CEO bonus compensation and earnings management is</td>
<td>Supported</td>
</tr>
<tr>
<td>stronger for ASX firms during the GFC period, compared to the pre-crisis period.</td>
<td></td>
</tr>
<tr>
<td>H1c The relationship between CEO total compensation and earnings management is</td>
<td>Supported</td>
</tr>
<tr>
<td>stronger for ASX firms during the GFC period, compared to the pre-crisis period.</td>
<td></td>
</tr>
<tr>
<td>H1d The relationship between CEO fixed compensation and earnings management is</td>
<td>Not supported</td>
</tr>
<tr>
<td>weaker for ASX firms, post-crisis period, compared to during the GFC period.</td>
<td></td>
</tr>
<tr>
<td>H1e The relationship between CEO bonus compensation and earnings management is</td>
<td>Supported</td>
</tr>
<tr>
<td>weaker for ASX firms, post-crisis period, compared to during the GFC period.</td>
<td></td>
</tr>
<tr>
<td>H1f The relationship between CEO total compensation and earnings management is</td>
<td>Supported</td>
</tr>
<tr>
<td>weaker for ASX firms, post-crisis period, compared to during the GFC period.</td>
<td></td>
</tr>
<tr>
<td>H1g The relationship between CEO fixed compensation and earnings management is</td>
<td>Not supported</td>
</tr>
<tr>
<td>weaker for ASX firms, post-crisis period, compared to pre-GFC period.</td>
<td></td>
</tr>
<tr>
<td>H1h The relationship between CEO bonus compensation and earnings management is</td>
<td>Not supported</td>
</tr>
<tr>
<td>weaker for ASX firms, post-crisis period, compared to pre-GFC period.</td>
<td></td>
</tr>
<tr>
<td>H1i The relationship between CEO total compensation and earnings management is</td>
<td>Not supported</td>
</tr>
<tr>
<td>weaker for ASX firms, post-crisis period, compared to pre-GFC period.</td>
<td></td>
</tr>
</tbody>
</table>

Research Question 2: How Does the Strength of Corporate Governance Moderate the Relationship between CEO Compensation and Earnings Management of 300 ASX firms?
The relationship between CEO fixed compensation and earnings management is weaker (stronger) for firms with strong (weak) corporate governance mechanisms. Supported

The relationship between CEO bonus compensation and earnings management is weaker (stronger) for firms with strong (weak) corporate governance mechanisms. Supported

The relationship between CEO total compensation and earnings management is weaker (stronger) for firms with strong (weak) corporate governance mechanisms. Supported

Research Question 3: What is the Joint Effect of the GFC and Corporate Governance on the Relationship between CEO Compensation and Earnings Management of 300 ASX firms?

The relationship between CEO fixed compensation and earnings management for SCG firms is significantly weaker than WCG firms during the crisis period Partially supported, not significant

The relationship between CEO bonus compensation and earnings management for SCG firms is significantly weaker than WCG firms during the crisis period Supported

The relationship between CEO total compensation and earnings management for SCG firms is significantly weaker than WCG firms during the crisis period Partially supported, not significant

The relationship between CEO fixed compensation and earnings management for SCG firms is significantly weaker than WCG firms in the Post-crisis period Partially supported, not significant

The relationship between CEO bonus compensation and earnings management for SCG firms is significantly weaker than WCG firms in the Post-crisis period Partially supported, not significant

The relationship between CEO total compensation and earnings management for SCG firms is significantly weaker than WCG firms during Post-GFC. Partially supported, not significant

There is a stronger (weaker) relationship between CEO fixed compensation and earnings management for WCG (SCG) Pre-GFC. Supported

There is a stronger (weaker) relationship between CEO bonus-based compensation and earnings management for WCG (SCG) Pre-GFC. Supported
H3i There is a stronger (weaker) relationship between CEO total compensation and earnings management for WCG (SCG) Pre-GFC. Supported
CHAPTER 7
Summary, Limitations and Avenues for Future Research

7.1 Introduction
The purpose of this chapter is to summarise the evidence regarding whether or not the relationship between CEO compensation and earnings management is affected by corporate governance practices and the Global Financial Crisis in Australia. This study builds on prior studies which established an association between CEO compensation and earnings management. Many of these studies argue that managers inflate their compensation by engaging in earnings management. This practice is antithetical to creating wealth for shareholders, which is a core fiduciary responsibility of managers. The GFC heightened debates on a number of issues, these being the increasing level of executive compensation and its disconnection from business performance and shareholders’ wealth. The issue of managers’ manipulation of earnings to achieve their personal interests at the expense of stakeholders has also been debated. Another equally important issue is the ability of corporate governance to monitor and restrain executives’ damaging behaviour.

Prior literature argues that it is more difficult for firms to meet targets during a financial crisis and, therefore, it is expected that firms may increase their earnings management practices at this time (see Iatridis and Kadorinis, 2009; Ahmed et al., 2008; Strobl, 2008; Chia et al., 2007; Saleh and Ahmed, 2005). The increase in earnings management may as a consequence increase CEO compensation. Therefore, examining whether or not the differences in corporate governance level affect the CEO compensation and earnings management relationship is important. This study, CEO Compensation and Earnings
Management, the moderating effect of Corporate Governance and the impact of the Global Financial Crisis” examined the effect of corporate governance and on the relationship between CEO compensation and earnings management. This chapter is organised as follows: Section 7.2 summarises the findings of the first five chapters. Section 7.3 describes the major findings as analysed in this study. Section 7.4 explains the potential implications for policy makers, compensation and corporate governance regulators, accounting standard setters, academic researchers, firms and the general public. The limitations of the study are discussed in Section 7.5 while Section 7.6 presents directions for future research. Finally, Section 7.7 concludes the chapter.

7.2 Overview of Prior Chapters

Chapter 1 introduces the whole study and establishes the context. It argues for the importance of examining the effectiveness of corporate governance to monitor and restrain the negative effect of earnings management on executive compensation in crisis periods. The chapter extends our knowledge about how ineffective corporate governance may encourage managers’ opportunistic behaviour and how managers manage earnings to influence CEO compensation during financial crises. The extant literature alleges CEO compensation is a major cause of the GFC and equally faults earnings management. The rising debates on whether or not earnings were managed to influence compensation during the GFC, and whether or not the economic crisis caused the relationship between CEO compensation and earnings management to alter and whether or not corporate governance was effective in controlling this relationship, are empirical questions. These questions motivate the current study to examine how the GFC alters the relationship between CEO compensation and earnings management and how corporate governance effectively moderates such a relationship. Chapter 1 provides evidence to justify further
accounting disclosure and improving corporate governance mechanisms should be imposed by regulators. The chapter sets the scope and justifies the importance of this study.

Chapter 2 specifically discusses the regulatory environment of executive compensation in Australia. The chapter defines its regulatory environment to include the relevant institutions, regulations, guidelines, requirements and rules that influence executive compensation in Australian businesses. The main sources of executive remuneration regulation in are the Corporations Act 2001, amendments to this statute as found in the CLERP 9 Act 2004 and the ASX listing rules and corporate governance. The Corporations Act 2001 had little to offer by way of regulating executives’ compensation. However, the ASX Corporate Governance principles regarding executive remuneration include “comply-or-explain” recommendations that each listed company’s board establish a remuneration committee.

Each listed company is to provide information on executive remuneration, including information on the remuneration committee and retirement benefits for non-executive directors in its annual report. Following the 2007/08 GFC the Australian Federal Labour Government tasked the Productivity Commission to review the country’s existing executive remuneration regulatory framework in its entirety, which had failed to address the increase in executive compensation. The Australian government - based on the recommendations made by the Productivity Commission - proposed a widespread executive compensation reforms.

Chapter 3 reviews the extant literature on CEO compensation and its relationship with earnings management. It begins with by discussing the components of compensation and
practices, underlying factors, setting and designing of executive compensation contract. The concepts and theories of compensation and the rationale for earnings management are discussed. Literature establishing the relationship between CEO compensation and earnings management are reviewed. It is evident from the literature that there have been studies on the role of corporate governance structures on CEO compensation and earnings management. Although results are mixed, evidence supports the view that firms with strong corporate governance structures can better monitor and restrain management’s detrimental behaviour compared to weak corporate governance firms.

Understanding the important role of quality corporate governance structures is needed. Substantial studies on the relationship between corporate governance structures and earnings management have been identified, and studies on the relationship between earnings management and compensation have been done. However, while the link between CEO compensation and corporate governance attributes has been covered, combining all these issues and examining the moderating impact of corporate governance during a crisis period have not been addressed. Chapter 3 therefore, identifies this gap. To the best of the researcher’s knowledge, no known study has yet done this and thus this study is unique.

Chapter 4 explains the conceptual framework and develops hypotheses to answer the research questions. These hypotheses are based on the reviewed studies, agency theory and positive accounting theory. The hypotheses predict the differential impact of Pre-GFC, Crisis and Post-GFC on the relationships between corporate governance and earnings management. The hypotheses also predict the expected moderating effect of corporate governance on the relationship between CEO compensation and earnings
management. In general, this study contends that strong corporate governance will reduce the problems caused by earnings management on compensation. Therefore, firms with weak corporate governance structures are expected to improve the quality of their governance systems.

Chapter 5 justifies the research designs and methods employed in this study. This chapter also provides detailed information about the sample selection procedure. The final sample includes 300 firms covering the period from 2005 to 2010. The study uses 1800 firm-year of annual reports, which are collected from the annual reports and corporate databases. Chapter 5 also explains why the study adopts the archival and content analysis of the companies’ documents by extracting data so that it is subjected to rigorous quantitative analysis. The measurements of all variables employed are described in Table 5.2. The chapter discusses why panel data regression techniques are employed to test the impact of the GFC and corporate governance on the relationship between CEO compensation and earnings management. Univariate mean test examines the changes made in variables from Pre-GFC to Post-GFC and also between Strong and Weak corporate governance firms. The chapter also justifies the adoption of the Modified Jones Model to estimate sample firms’ earnings management activities.

7.3 Summary of Empirical Results
Chapter 6 presents the descriptive results of the variables as well as the regression results. The results address the hypotheses developed within the context of the related three research questions. Research Question 1 is concerned with how the relationship between CEO compensation and earnings management changes from Pre-GFC to Crisis and to Post-GFC periods. In
other words, it concerns whether or not the GFC provides evidence of differential impacts on the relationship between CEO compensation and earnings management. This study provides evidence that the relationship between CEO compensation and earnings management changes from Pre-GFC to Crisis and to Post-GFC periods. The results show that the relationship between CEO compensation and earnings management is stronger in the crisis period than non-crisis periods (pre- and post-GFC). This suggests that crisis period affects the CEO compensation and earnings management relationship.

Research Question 2 investigates whether or not corporate governance moderates the relationship between CEO compensation and earnings management. Corporate governance index score is constructed to measure the strength of firms’ corporate governance level. A number of corporate governance attributes emerge as significant to monitoring executive behaviour and for this reason were included in the construction of the index score. These include but are not limited to boards’ characteristics (independence, expertise and diligence) and the set-up of various board committees (audit, nomination and remuneration committees). Results show that corporate governance moderates the relationship between CEO compensation and earnings management. It suggests that strong corporate governance reduces the negative effect of earnings management on CEO compensation.

Research Question 3 is designed to reveal the potential of joint effect of the GFC and corporate governance on the relationship between CEO compensation and earnings management. The panel data fixed effect regression techniques analysis provides evidence that earnings management behaviour influences CEO compensation at least, partially. The extent of earnings management significantly, determines bonus
compensation and that managers manipulate earnings to maximise their compensation; this is evidence of managerial opportunism. Not surprisingly though, the results show a very weak relationship between earnings management and CEO fixed compensation. These results are consistent with managers engaging in earnings management in the absence of expected self-benefits.

The findings also suggest that the relationship between CEO compensation and earnings management changes during different cycles of the economy: Pre-GFC, Crisis and Post-GFC periods. The results, however, suggest that the presence of a strong corporate governance structure is more significant in reducing the negative effect of earnings management on CEO compensation than weak corporate governance firms. The results provide further evidence that during the crisis period, the relationship between CEO compensation (especially, bonus) and earnings management was at the highest level. However, strong corporate governance ameliorates the highest level of relationship between CEO compensation and earnings management.

7.4 Potential Implications of the Study

There are potential implications and useful propositions that this study highlights for stakeholders to consider, particularly accounting and corporate governance regulators. As accounting measurement is becoming an important issue, and prevention and controlling mechanisms must be continuously refined. The accounting professions have discussed and continue to improve accounting standards to provide more meaningful accounting figures and to reduce managerial discretions in the report of earnings. It can be inferred from the results of this study that there are differential earnings management depending on the economic environment. For example, during the crisis period, the relationship
between CEO compensation and earnings management was close, indicating that executives manage more closely during a crisis period, and especially in weak corporate governance firms. The evidence therefore, shows that unless there are adequate regulations and monitoring of managerial discretion (such as earnings management), executives may take advantage of any weakness in the monitoring system and opportunistically, further their own interests at the expense of shareholders’ interests.

Standard setters and regulators need to increase requirements for more accounting disclosures to reduce earnings management which can negatively influence compensation and affect the value of the firm and consequently, the wealth of shareholders. Monitoring during unusual periods such as crisis periods must be enhanced. Regulators are therefore encouraged not only to enforce more disclosure and improve accounting rules and standards but also to develop requirements that can reduce or prevent opportunistic discretionary accruals, especially, during crisis periods. Boards of directors and their affiliated committees are also expected to increase fiduciary and monitoring roles to identify situations where harmful behaviour arises. The findings also suggest that remuneration committees make the effort to design more appropriate compensation contracts to delineate earnings management from real performance.

Of the hypotheses developed for this study, effective corporate governance is likely to effectively monitor and restrain the negative effect of earnings management on CEO compensation. The results of this study indicate that the effect of earnings management on CEO compensation is less positive for strong corporate governance firms. Firms with weak governance are weakened by the negative effect of earnings management because they are more vulnerable to managerial opportunism. Therefore, encouraging good
governance is as important as improving accounting rules and standards. Australian corporate governance has consistently been ranked among the best in the world by the World Economic Forum (see (World Economic Forum report, 2008). For example, around 75 per cent of remuneration committees in larger companies comprise only non-executive directors. Most remuneration committees in the top 400 companies comprise mainly independent non-executive directors and they have an independent chair. However, Australian business does not implement a rule-based approach but instead a principle-based approach of corporate governance. This is where firms are to comply or explain (“if not, why not” approach). This may encourage firms to be lax. This study acknowledges the strength of principle-based regulations which encourage firms to be intuitive and that the application should not require reference to too much detail. Yet, the Australian Corporate Governance Council may consider a “Rule-Based Approach” instead of a “Principle-Based Approach”

Another potential policy interest in Australia is the group of firms that the current corporate governance guidelines apply to. Currently, some of the guidelines or principles apply more strictly to larger companies (Top 300 firms) than smaller ones, even though corporate governance is much closer to best practice in the former. It is therefore not unreasonable to expect larger companies to implement accepted best practice. While recognising the need for flexibility to accommodate the diversity of Australian companies, applying the guidelines and principles must, however, be extended to cover strictly all firms, or at least all listed companies. The results of this study provide evidence to support the role of corporate governance in reducing negative effects of earnings management. The study supports better monitoring roles to be delivered with strong corporate governance structures in order to minimise the earnings management
(Osma, 2008). Strong corporate governance mechanisms will induce better monitoring strategies to that protect firms from executives taking advantage of weak governance systems and economic downturns to appropriate firms’ resources for themselves.

7.5 Limitations of the Study

This study is conducted in a specific context and therefore it is subject to a set of limitations and caveats. The major limitation of this study is that it focuses exclusively on a single motivation to manage earnings. The issue of multiple and potentially conflicting motivations is not fully considered in here, as is the case with most of earnings management studies (Fields et al., 2001). For example, the current study does not recognise in the model, a situation where management earnings management behaviour that is expected to maximise compensation also increases the probability of debt covenant violations.

Moreover, the variety of different CEO’s employment contracts, particularly different company performance target measures have not been possible to account for in this study. Company performance measures may be quantitative and or qualitative. For example, a CEO may be given a bonus if he/she can improve the Occupational Health and Safety (OH&S) record for the company say by reducing the number of accidents on the company premises. Another possible non-financial performance measure is improving customer satisfaction (Gay et al., 2007). The findings of this study are based on the assumption that bonuses only relate to company reported accounting profits. Furthermore, the use of remuneration based only on the salary and bonus components, however, may understate the sensitivity of remuneration to performance since there may be other components of
remuneration such as shares and options which may be sensitive to corporate performance.

Additionally, although discretionary accruals examine the net effect of all accounting choices on the accruals of the firm for the period under consideration, single accounting choices may be utilised to achieve different objectives. This study does not consider situations where managers may adopt single or multiple accounting procedures instead of discretionary accruals. This makes it difficult to generalise the results without considering accounting procedures. Arguably, the Modified Jones Model is to date the best measure of discretionary accrual, and the results of this study are limited by the ability of the estimation models to detect earnings management. It is argued that the mis specification problem is common to all earnings management studies (Fields et al. (2001). For example models used to detect accrual management may not be of sufficient power to differentiate between accruals management and real performance.

This study uses the composite measure to determine the impact of corporate governance on the relationship between CEO compensation and earnings management. Even though it is not the purpose of this study to determine the effect of individual attributes of corporate governance, future research may develop a model to include individual attributes of corporate governance to suggest which attributes require more regulations. The study also limited the investigation to only CEO compensations. However, compensation of other executive members is equally important and may also suffer from earnings management.

7.6 Avenues for Future Research Opportunities
This section briefly discusses promising directions for future research. The results of this study support the opportunism hypothesis rather than the efficient hypothesis. The GFC is expected to affect the performance of firms and so future research could investigate the impact of firm performance on the relationship between CEO compensation and earnings management and measure the effect of the GFC. This could provide more insights into whether compensation as influenced by earnings management is efficient in aligning the interests of CEO with shareholders or is opportunistic. Another research avenue is to extend this study by using varied forms of earnings management measures to examine their impact on CEO compensation. This may help identify the simultaneous impact of multiple earnings management methods, multiple incentives and econometric complications on CEO compensation. Additionally, future studies may look at distinguishing earnings management into income-increasing and income-decreasing. This could reveal whether managers use income-smoothing and income-decreasing/increasing as substitutes or complements. Future research may also attempt to develop a methodology that incorporates multiple and conflicting motivations of earnings management to accommodate the complexity of the earnings management environment and the mechanism by which this environment impacts on CEO compensations.

Despite its potential complexity, future research could develop a model to include all possible corporate governance attributes so that the individual effect can be identified for action and in the process improve the quality of corporate governance. Future research may also examine the compensation of other executive members and directors which are equally important and may be influenced by earnings management. Replication of this research using data from other international markets is likely to provide insights into how corporate governance moderates the relationship between CEO compensation and
earnings management in different markets. This is important as corporate governance systems differ from country to country.

7.7 Conclusion

The objective of the study is to empirically examine how the executive compensation and earnings management relationship is simultaneously affected by the GFC and moderated by corporate governance. This study assumes a differential effect on the relationship between CEO compensation and earnings management when comparing the Pre-GFC, Crisis and Post-GFC periods. It also presupposes that strong corporate governance can reduce the negative effect of earnings management on CEO compensation. This study investigates whether such assumptions are well-founded.

Consistent with the predictions of this study, the results shows that the relationship between CEO compensation and earnings management changes due to the economic crisis, the GFC. Moreover, corporate governance level moderates the relationship. CEO compensation and earnings management are influenced by the economic environment and corporate governance and provides the rationale for regulatory bodies scrutinising it more closely. The Australian corporate governance guidelines were formulated on the implicit assumption that strengthening corporate governance mechanisms would improve the monitoring of firms’ executives and protect shareholder value. The corporate governance guidelines and requirements should be consolidated to cover all firms. This will help on how compensation contracts can be structured so as to align interests of managers and shareholders while also reducing the incentive for managing earnings. This thesis indicates that if firms maintain good governance practices they will be less vulnerable to opportunistic earnings management.
The main contribution of this thesis to the existing knowledge is that it extends the literature on the relationship between CEO compensation and earnings management by examining the role of the economic environment and the moderating effect of corporate governance on this relationship. This thesis’s findings are therefore, clearly useful for investors, academics and regulators. Investors can rely on these findings to demand more monitoring and scrutiny to limit the existence of opportunistic managerial behaviour and for the appropriate designing of CEO compensation packages in such a way that it increases the manager-shareholder alignment and reduces the agency problem. It is hoped that the evidence presented in this study will assist academic researchers to more effectively test and understand theories that objectively inform practice. Regulators of corporate governance laws and accounting standards setters are encouraged to prescribe appropriate requirements to protect shareholders.
### Appendix A

**Executive Compensation Terminology**

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary</td>
<td>(1) Base pay</td>
</tr>
<tr>
<td></td>
<td>(2) Basic pay</td>
</tr>
<tr>
<td>Bonus</td>
<td>(1) Annual performance bonus</td>
</tr>
<tr>
<td></td>
<td>(2) Short-term incentives</td>
</tr>
<tr>
<td>Long-Term Incentive Plans (LTIPs)</td>
<td>(1) Performance share plan (PSP)</td>
</tr>
<tr>
<td></td>
<td>(2) Performance Share Award (PSA)</td>
</tr>
<tr>
<td></td>
<td>(3) Executive Incentive Plan</td>
</tr>
<tr>
<td></td>
<td>(4) Share Matching Plan</td>
</tr>
<tr>
<td></td>
<td>(5) Restricted share plan</td>
</tr>
<tr>
<td></td>
<td>(6) Conditional Shares</td>
</tr>
<tr>
<td>Executive share options (ESOs)</td>
<td>(1) Stock options</td>
</tr>
<tr>
<td></td>
<td>(2) Share options</td>
</tr>
<tr>
<td></td>
<td>(3) Performance options</td>
</tr>
<tr>
<td></td>
<td>(4) Transformation Incentive Plan– Option award</td>
</tr>
<tr>
<td>Benefits</td>
<td>(1) Benefits in kind</td>
</tr>
<tr>
<td></td>
<td>(2) Perquisites</td>
</tr>
<tr>
<td></td>
<td>(3) Allowances</td>
</tr>
<tr>
<td>Pension</td>
<td>(1) Retirement plan</td>
</tr>
<tr>
<td>Deferred bonus</td>
<td>(1) Deferred Share Scheme</td>
</tr>
<tr>
<td></td>
<td>(2) Deferred annual bonus share awards</td>
</tr>
<tr>
<td></td>
<td>(3) Short term deferred incentive plan</td>
</tr>
<tr>
<td></td>
<td>(4) Annual incentive bonus plan-deferred shares</td>
</tr>
<tr>
<td></td>
<td>(5) deferred element of the annual bonus</td>
</tr>
</tbody>
</table>

*Source:* Designed by the author based on detailed information directly in the firms’ annual reports.
## Appendix B

**Inflation and Consumer Price index as used to standardized compensation**

<table>
<thead>
<tr>
<th>Year</th>
<th>Inflation Rates</th>
<th>Consumer Price index</th>
<th>GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>2.3%</td>
<td>80.5</td>
<td>1.08</td>
</tr>
<tr>
<td>2005</td>
<td>2.7%</td>
<td>83</td>
<td>3.11</td>
</tr>
<tr>
<td>2006</td>
<td>3.8%</td>
<td>85.9</td>
<td>2.69</td>
</tr>
<tr>
<td>2007</td>
<td>2.3%</td>
<td>91.8</td>
<td>4.69</td>
</tr>
<tr>
<td>2008</td>
<td>4.4%</td>
<td>93.4</td>
<td>2.49</td>
</tr>
<tr>
<td>2009</td>
<td>1.8%</td>
<td>96.1</td>
<td>1.37</td>
</tr>
<tr>
<td>2010</td>
<td>2.9%</td>
<td>99.3</td>
<td>2.51</td>
</tr>
<tr>
<td>2011</td>
<td>3.0%</td>
<td>102.4</td>
<td>2.14</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics
## Appendix C

### Corporate Governance elements used in the construction of governance index

<table>
<thead>
<tr>
<th>Variables</th>
<th>Operational definition/Measurement</th>
<th>Source of information</th>
<th>Reference in ASX recommendations and recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSIZE= Board Size</td>
<td>Smaller boards are efficient, hence boards size average or below (8) as found.</td>
<td>Company annual reports</td>
<td>Principle 2 - Structure the board to add value. Companies should have a board of an effective composition, size and commitment to adequately discharge its responsibilities and duties. N/A however based on the hypothesis</td>
</tr>
<tr>
<td>Board composition</td>
<td>Ratio of non-executive directors to total number of directors on the board</td>
<td>Company annual reports</td>
<td>2.1. A majority of the board should be independent directors.</td>
</tr>
<tr>
<td>Board Majority Non-Exe Directors</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>2.1 A majority of the board should be independent directors.</td>
</tr>
<tr>
<td>Independent chairperson</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>2.2 The chairperson should be an independent director.</td>
</tr>
<tr>
<td>Role Duality</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>2.3 The roles of the chairperson and CEO should not be exercised by the same individual.</td>
</tr>
<tr>
<td>Nominating Committee</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>2.4 The board should establish a nomination committee.</td>
</tr>
<tr>
<td>Majority Independent Nominating Committee Audit committee Presence</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>N/A</td>
</tr>
<tr>
<td>Audit committee size</td>
<td>If more than three</td>
<td>Company annual reports</td>
<td>4.2 The board should establish an audit committee.</td>
</tr>
<tr>
<td>Audit committee Independent Chair</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>4.3 Structure the audit committee so that it consists of, at least three members.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Variables</th>
<th>Operational definition/Measurement</th>
<th>Source of information</th>
<th>Reference in ASX recommendations and recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit committee wholly Non-Executive Directors</td>
<td></td>
<td>Company annual reports</td>
<td>4.3 Structure the audit committee so that it consists of: only non-executive directors</td>
</tr>
<tr>
<td>Audit Committee Financial Expertise Chair</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>Financial expertise-chair</td>
</tr>
<tr>
<td>Audit Committee Majority with Financial Expertise</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>N/A, however, deduced from literature that majority with expertise</td>
</tr>
<tr>
<td>Audit committee Diligence (measured by Frequency of meeting)</td>
<td>Actual Number of meetings</td>
<td>Company annual reports</td>
<td>N/A, however, deduced from literature that frequency in meeting leads to Diligence</td>
</tr>
<tr>
<td>Audit Committee Formal Charter</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>Recommendation 4.3: The audit committee should have a formal charter.</td>
</tr>
<tr>
<td>Remuneration Committee Presence</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>9.2 The board should establish a remuneration committee</td>
</tr>
<tr>
<td>Remuneration Committee Independent Chair</td>
<td>Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>Recommendation 8.2: The remuneration committee should be structured so that it is chaired by an independent chair</td>
</tr>
<tr>
<td>Majority Independence</td>
<td>Ratio of non-executive directors to total number of directors on the committee</td>
<td>Company annual reports</td>
<td>Recommendation 8.2: The remuneration committee should be structured so that it consists of a majority of independent directors</td>
</tr>
<tr>
<td>Remuneration Committee Size</td>
<td>Large size attracts expertise: Dichotomous, 1 or 0</td>
<td>Company annual reports</td>
<td>Recommendation 8.2: The remuneration committee should be structured so that it has at least three members</td>
</tr>
</tbody>
</table>

Sources: Authors design based on ASX guidelines, the literature and company annual reports and the board.
Appendix D

Panel A:  
Percentage change of mean differences in the variables during pre-crisis and crisis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre-Crisis</th>
<th>Crisis</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCG</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>339070</td>
<td>359954</td>
<td>4.72%</td>
</tr>
<tr>
<td>BCOM</td>
<td>286574</td>
<td>266026</td>
<td>-8.43%</td>
</tr>
<tr>
<td>OCOM</td>
<td>118470</td>
<td>221965</td>
<td>84.82%</td>
</tr>
<tr>
<td>TCOM</td>
<td>744114</td>
<td>847945</td>
<td>12.41%</td>
</tr>
<tr>
<td>DACC</td>
<td>0.024</td>
<td>0.019</td>
<td>-20.8%</td>
</tr>
<tr>
<td>SIZE</td>
<td>21.432</td>
<td>21.816</td>
<td>3.84%</td>
</tr>
<tr>
<td>LEV</td>
<td>23.41</td>
<td>27.20</td>
<td>16.2%</td>
</tr>
<tr>
<td>ROA</td>
<td>0.012</td>
<td>0.011</td>
<td>-9.8%</td>
</tr>
<tr>
<td><strong>WCG:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>192207</td>
<td>254960</td>
<td>30.85%</td>
</tr>
<tr>
<td>BCOM</td>
<td>142644</td>
<td>186304</td>
<td>28.84%</td>
</tr>
<tr>
<td>OCOM</td>
<td>119428</td>
<td>139303</td>
<td>15.06%</td>
</tr>
<tr>
<td>TCOM</td>
<td>454280</td>
<td>557796</td>
<td>21.12%</td>
</tr>
<tr>
<td>DACC</td>
<td>0.102</td>
<td>0.113</td>
<td>10.8%</td>
</tr>
<tr>
<td>SIZE</td>
<td>17.336</td>
<td>17.732</td>
<td>2.28%</td>
</tr>
<tr>
<td>LEV</td>
<td>26.37</td>
<td>22.60</td>
<td>-14.3%</td>
</tr>
<tr>
<td>ROA</td>
<td>0.013</td>
<td>-0.011</td>
<td>1.91%</td>
</tr>
</tbody>
</table>
Panel B:

Percentage change of mean differences in the variables during pre-crisis and Post-crisis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre-Crisis</th>
<th>Post-Crisis</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCG</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>339070</td>
<td>508961</td>
<td>48.42%</td>
</tr>
<tr>
<td>BCOM</td>
<td>286574</td>
<td>368165</td>
<td>27.03%</td>
</tr>
<tr>
<td>OCOM</td>
<td>118470</td>
<td>289974</td>
<td>142.01%</td>
</tr>
<tr>
<td>TCOM</td>
<td>744114</td>
<td>1167099</td>
<td>55.08%</td>
</tr>
<tr>
<td>DACC</td>
<td>0.024</td>
<td>0.021</td>
<td>-12.5%</td>
</tr>
<tr>
<td><strong>SIZE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>21.432</td>
<td>21.970</td>
<td>2.5%</td>
</tr>
<tr>
<td>BCOM</td>
<td>23.41</td>
<td>24.12</td>
<td>3%</td>
</tr>
<tr>
<td><strong>LEV</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>0.012</td>
<td>0.017</td>
<td>4.46%</td>
</tr>
<tr>
<td><strong>ROA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>192207</td>
<td>262124</td>
<td>34.84%</td>
</tr>
<tr>
<td>BCOM</td>
<td>142644</td>
<td>163000</td>
<td>12.99%</td>
</tr>
<tr>
<td>OCOM</td>
<td>119428</td>
<td>190299</td>
<td>57.55%</td>
</tr>
<tr>
<td>TCOM</td>
<td>454280</td>
<td>615424</td>
<td>33.95%</td>
</tr>
<tr>
<td>DACC</td>
<td>0.102</td>
<td>0.100</td>
<td>-1.96%</td>
</tr>
<tr>
<td><strong>SIZE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>17.336</td>
<td>17.695</td>
<td>2.07%</td>
</tr>
<tr>
<td>BCOM</td>
<td>26.37</td>
<td>23.48</td>
<td>-10.96%</td>
</tr>
<tr>
<td><strong>LEV</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>-0.013</td>
<td>0.019</td>
<td>2.31%</td>
</tr>
<tr>
<td><strong>ROA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Panel C: Percentage change of mean differences in the variables during pre-crisis and Post-crisis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Crisis</th>
<th>Post-Crisis</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCG</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>359954</td>
<td>508961</td>
<td>41.73%</td>
</tr>
<tr>
<td>BCOM</td>
<td>266026</td>
<td>368165</td>
<td>38.72%</td>
</tr>
<tr>
<td>OCOM</td>
<td>221965</td>
<td>289974</td>
<td>30.95%</td>
</tr>
<tr>
<td>TCOM</td>
<td>847945</td>
<td>1167099</td>
<td>37.96%</td>
</tr>
<tr>
<td>DACC</td>
<td>0.019</td>
<td>0.021</td>
<td>10.53%</td>
</tr>
<tr>
<td>SIZE</td>
<td>21.816</td>
<td>21.970</td>
<td>0.71%</td>
</tr>
<tr>
<td>LEV</td>
<td>27.20</td>
<td>24.12</td>
<td>-11.32%</td>
</tr>
<tr>
<td>ROA</td>
<td>-0.011</td>
<td>0.017</td>
<td>2.65%</td>
</tr>
<tr>
<td><strong>WCG</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCOM</td>
<td>254960</td>
<td>262124</td>
<td>3.05%</td>
</tr>
<tr>
<td>BCOM</td>
<td>186304</td>
<td>163000</td>
<td>-12.30%</td>
</tr>
<tr>
<td>OCOM</td>
<td>139303</td>
<td>190299</td>
<td>36.93%</td>
</tr>
<tr>
<td>TCOM</td>
<td>557796</td>
<td>615424</td>
<td>10.59%</td>
</tr>
<tr>
<td>DACC</td>
<td>0.113</td>
<td>0.100</td>
<td>-11.04%</td>
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<tr>
<td>SIZE</td>
<td>17.732</td>
<td>17.695</td>
<td>-0.21%</td>
</tr>
<tr>
<td>LEV</td>
<td>22.60</td>
<td>23.48</td>
<td>3.89%</td>
</tr>
<tr>
<td>ROA</td>
<td>-0.011</td>
<td>0.019</td>
<td>-2.94%</td>
</tr>
</tbody>
</table>

Where: FCOM is Fixed Salary= Total dollar basic salary reported by firms, BCOM is Bonus= Total dollar bonus compensation reported by firms, OCOM is Other= total dollar compensation paid other than fixed and bonus compensation, TCOM is Total Compensation= Sum of individual components of compensation, DACC= Discretionary Accruals proxy for earnings management, Size= The natural log of Total Assets, Leverage= Financial leverage measured as the ratio of debt and equity and ROA= Return on Assets
Appendix E

The descriptive statistics of the Kothari measurement of discretionary accruals

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>St.Dev</th>
<th>Median</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCG</td>
<td>-0.208</td>
<td>0.212125</td>
<td>-0.480</td>
<td>-0.614</td>
<td>1.246</td>
</tr>
<tr>
<td>WCG</td>
<td>0.004</td>
<td>0.103165</td>
<td>0.015</td>
<td>-0.148</td>
<td>0.123</td>
</tr>
<tr>
<td>Combine</td>
<td>-0.135</td>
<td>0.023620</td>
<td>-0.137</td>
<td>-0.228</td>
<td>-0.052</td>
</tr>
</tbody>
</table>


Chtourou, S.M., Bédard, J. & Courteau, L. (2001). Corporate governance and earnings management, working paper, Laval University, Quebec City.


Hribar, P., Yang, H. (2011) CEO overconfidence, managerial earnings forecasts, and earnings management. Working Paper, University of Iowa and Cornell University,


OECD, 2009. Corporate governance and the financial crisis: Key findings and main messages.


Ribstein, L.E. and Butler H.N. (2008), "Where was SOX?", *Forbes*, 182: 28


