

CEO REMUNERATION: AUSTRALIAN EVIDENCE OF THE INFLUENCE OF REPUTATION, PERFORMANCE AND GOVERNANCE

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DECLARATION

I, Damian Tien Foo Niap, declare that:

- a) except where due acknowledgement has been made, the work completed is mine alone;
- b) the work has not been submitted previously, in whole or in part, to qualify for any other academic award;
- c) the content of the thesis is the results of work which has been carried out since the official commencement date of the approved research program;
- d) any editorial work, paid or unpaid, carried out by a third party is acknowledged; and
- e) relevant ethics procedures and guidelines have been followed.

Signature

Name

June 2013

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ABSTRACT

The issue of remuneration of executives, especially chief executive officers (CEOs), tends to attract attention from the media, regulators and the public in general. This is especially true in times of financial crisis such as the recent global financial crisis (GFC). There is a perception that CEOs may be paid excessively despite performing poorly (Clarke 2007). This concern therefore provides the impetus for this study: Is there a common basis for the justification of CEO remuneration? There have been numerous studies undertaken in the past to understand what affects CEO remuneration. The most commonly researched drivers of CEO remuneration are those related to conventional corporate financial performance measures such as return on equity; as well as the influence from corporate governance mechanisms and ownership structures. These studies have produced mixed results (for example Merhebi, Pattenden, Swan and Zhou 2006; Productivity Commission 2009).

A review of the literature suggests that there are other factors which drive CEO remuneration especially if viewed from a broader stakeholders' perspective (Kim, Joo and Choi 1996; Niap, Taylor, Morley and Kim 2012). Therefore, this study seeks to add two new drivers to the traditional models, namely CEO personal professional reputation and company productivity as an alternate to conventional company financial performance measures. The literature also criticises previous studies that concentrate on only one (corporate governance) perspective to study the agency problem which is the conflict between shareholders and management interests (for example Shivdasani 1993). Rather, the literature contends that studying the agency problem depends on the efficiency of a bundle of monitoring mechanisms (Agrawal and Knoeber 1996). Furthermore, certain authors have questioned the effectiveness of the Anglo-American corporate governance structure (Clarke 2010). Accordingly, this study revisits the monitoring effects that ownership structure and the quality of the remuneration committee may have on CEO remuneration. Ownership structure is measured by the percentage of shares owned by external substantial shareholders while the quality of the remuneration committee is measured by its independence and diligence. The possible influences of company size, industry, volatility of company returns and company growth are controlled for in this study. In addition, this study seeks to provide evidence on the comparative effects that these drivers may have on not just total CEO remuneration, but also on the two major components of fixed and performance-based remuneration that make up

total CEO remuneration. Consequently, this study seeks to address the following five research questions:

- RQ1 is there a relationship between CEO professional reputation and CEO remuneration?
- RQ2 is there a relationship between the independence of the company's remuneration committee and CEO remuneration?
- RQ3 is there a relationship between the diligence of the company's remuneration committee and CEO remuneration?
- RQ4 is there a relationship between company performances, in terms of the following, and CEO remuneration:
- RQ4.1 conventional company financial performance; and or
- RQ4.2 productivity? and
- RQ5 is there a relationship between the concentration of the company's shareholders and CEO remuneration?

The method entails a quantitative approach using panel regression analysis of data from companies sampled from the Top 200 ASX listed companies (based on their market capitalisation in 2009) over three years from 2007 to 2009. This study spans the period from 2007 to 2009 due to the intense public attention that excessive executive remuneration garnered due to the GFC. Data are obtained from secondary sources, namely companies' annual reports and the FinAnalysis, Connect4 and DatAnalysis databases. A total of 18 regressions are run.

Measuring reputation is difficult because it is an intangible. Therefore, it is contended that constructing a reputation index based on objective measures from annual reports provides a more reliable indicator of reputation which is the approach taken in this study. For the purpose of this study, CEO professional reputation, which is a component of CEO personal reputation, is used because this can be measured objectively from data obtained from annual reports. The CEO professional reputation index is constructed using the following four proxies as based on the literature and face validity:

- CEO education level;
- CEO professional memberships;
- CEO prior working experience; and
- CEO tenure with the company.

In assessing the relationship between CEO remuneration and company productivity, both partial productivity, and multifactor or total productivity measures are used. Partial productivity measures comprise of labour productivity, structural productivity and physical capital productivity.

In regard to research question one, the results clearly show a positive association between CEO fixed remuneration and CEO professional reputation. For research questions two and three, the results indicate that the internal governance factor, the quality of the remuneration committee in terms of its independence and diligence, has not had a significant impact on the determination of CEO remuneration. The results for research question 4.1 are mixed. There does not appear to be any significant effect of ROE or total shareholders return on CEO remuneration, although there is a positive relationship between net operating cash flow and CEO remuneration. For research question 4.2, the results indicate a positive relationship between CEO remuneration and company total productivity. Finally, the results indicate that the external governance factor, concentration of substantial shareholders (research question five), has not had a significant impact on the determination of CEO remuneration during the period of the GFC.

The contributions of this study to the literature are threefold. Firstly, this is the first known attempt to construct a CEO professional reputation index which provides a starting point for future research to further improve on this index. Secondly, this study introduces two new, as in previously unexplored, determinants of CEO remuneration which are CEO professional reputation and company productivity. The findings show that these two factors have an influence on CEO remuneration. Thirdly, this study provides results applicable to an understanding of remuneration packaging by looking at not just CEO total remuneration but also at the two major components that make up total remuneration. By comparing findings on the determinants of fixed and performance-based remuneration, insights are provided that can have implications for corporate governance regulators and a range of company stakeholders in addressing issues on how CEO remuneration should be packaged in the future.

There are limitations to this study. The model specifications, while comprehensive, may well have included other variables and inter-relationships. Other governance variables, particularly concerning the board, could have been chosen; interrelationship that drawn out concepts such as pay elasticity and sensitivity could have been modelled. Future studies may extend the

scope of this study by expanding the model specification or by extending the data collection to other (country) contexts. The important contribution of this study to executive remuneration research is to identify the significance of two previously under-explored determinants, namely, CEO professional reputation and company productivity performance.

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Chapter 1. INTRODUCTION

1.1 Introduction

The Australian government's response to the corporate failures in the early 2000s in the United States (USA) (particularly Enron and WorldCom) and in Australia (particularly HIH) was to implement major reforms to corporate governance through the introduction of the Corporate Law Economic Reform Program (Audit Reform and Corporate Disclosure) Act 2004 (Hanrahan et al. 2007). This Act gave rise to amendments to the Corporations Act and related legislation which addressed, amongst a wide range of corporate governance changes, the issue of executive remuneration. On this issue, the legislative amendments included clarification of the disclosure requirements for executives' and directors' remuneration, the providing of a Remuneration Report on executives and directors as a section in the company's annual report, and giving shareholders a non-binding vote on whether or not to adopt the Remuneration Report.

Past events involving misappropriation of funds by company executives have highlighted the importance of disclosing key management personnel (KMP) remuneration. For example, the former chief executive officer (CEO) of WorldCom was reputed to owe the company more than \$400 million in personal loans before the company was forced into bankruptcy (Clarke 2007). This increased disclosure of KMP remuneration has attracted increased media and public interest in recent years (Clarkson, Van Bueren and Walker, 2006) as well as the scrutiny of policy makers such as the Australian Securities Exchange (ASX) (Hill and Myablou 2002; Brown and Samson 2003; Doucouliagos, Haman and Askary 2007).

Executive remuneration is popularly perceived to be excessive in countries that adopt a market-based approach to corporate governance, especially in the United States (Clarke 2007). The Global Financial Crisis (GFC) of 2008, with financial institutions seen as the main cause of this problem, only served to heighten concerns in the media over corporate governance and executives' remuneration (Clarke 2010; Mace 2010; Stiglitz 2010). Although shareholders' value plummeted with some companies and industries having to be propped up by taxpayers, KMP remuneration appeared to remain largely unscathed. This has reinforced

the popular view that executives are being rewarded for failure after having been rewarded for success or sheer good luck by virtue of being a CEO during an economic boom. Such excessive remuneration outcomes appear at odds with a supposedly efficient executive labour market. This has compounded longstanding community disquiet in regard to the widening gap between KMP remuneration and other employees' remuneration (Productivity Commission 2009). For example, the Herald Sun newspaper on 1 August 2008 reported that the then NAB chief executive resigned from his job with the bank with a \$10 million payout after just four years in that role whereas a worker who was retrenched from Don Smallgoods received only \$40,000 after eight years of service (McManus and Johnston 2008).

Given the adverse publicity concerning KMP remuneration especially with the recent financial crisis in the USA and Europe (Grattan and Medew 2008; Sandler and Kary 2008), it can be argued that there is a disincentive to disclose more than the minimum required by the regulations. Equity-based compensation to company directors and executives in particular has received a lot of attention in the last two decades (Liu and Taylor 2008). Accordingly, this has led to calls within the corporate governance movement for greater transparency on the remuneration of directors and top executives of listed companies (Taylor, Darus and Liu 2008).

Despite all the seemingly negative publicity, why has KMP remuneration grown so strongly? The Productivity Commission (2009) report on executive remuneration in Australia cites globalisation, the competition for the best talent, and increased company size as reasons for this increase. The liberalisation of Australia's economy and the introduction of competition to previously government-owned enterprises led to major structural change domestically such as corporate consolidations and the emergence of companies with global operations which are highly competitive. One example is BHP Billiton which had a market capitalisation of \$16 billion in 1989, which has since increased to approximately \$210 billion in 2010. For many large companies, the benefits of having highly talented KMP may substantially outweigh the costs of having inferior KMP. Furthermore, companies with global operations now demand candidates who have international experience. This demand is facilitated by the increased mobility of KMP across companies and borders. Another possible reason for the spiralling remuneration is the requirement to disclose individual KMP remuneration since 1998 as opposed to before 1998 when disclosure of KMP remuneration was by pay bands. It is argued that such public disclosure of individual KMP remuneration may have led to spiralling

remuneration since companies and KMP would not want to be perceived as employing or being a below average KMP. However, the Productivity Commission (2009) does not find any clear evidence that there is a spurt in KMP remuneration pursuant to the introduction of these more stringent disclosure rules. Nonetheless, the Productivity Commission (2009) concedes that public disclosure of individual KMP remuneration is likely to have rapid consequential effects within an industry if one company in that particular industry pays an overseas-appointed KMP a higher level of remuneration.

1.2 Multiple drivers of CEO remuneration

Given the intense public scrutiny in Australia and other western countries of executive remuneration, particular the level of CEO pay relative to corporate performance (Merhebi, Pattenden, Swan and Zhou 2006), there have been many prior studies across the fields of finance, economics, law, and management science concerning the factors that contribute to the determination of executive remuneration. The Productivity Commission (2009) divides this literature into two broad categories as follow:

- market factors; and
- corporate governance factors.

However, the Productivity Commission (2009) concedes that the two abovementioned categories are not necessarily mutually exclusive. Financial and labour market forces and imperfect corporate governance may have, in tandem, led to increases in executive remuneration. The labour market for CEOs is fundamentally similar to other labour markets in that employers are prepared to pay up to the value of a worker's contributions, while employees will want to be remunerated at least equal to what they can earn elsewhere or in other pursuits (Productivity Commission 2009). The eventual outcome in the negotiation of the appropriate remuneration package will be influenced by the information available to each party such as the full nature of the work and the quality of the person. According to agency theory, this information asymmetry between contracting parties in negotiating CEO remuneration will be present in both labour markets and financial markets. The CEO, by virtue of this powerful and distinct role, can have a pervasive effect on the company through his or her decisions and actions. Although CEOs generally would not want to damage their reputation by taking actions that damage their company, their own goals and interests may

not align with those of the shareholders. Since it is difficult and costly for the board of directors to directly monitor the level and quality of CEO effort and performance, the remuneration structure can be a crucial mechanism for obtaining a closer alignment of CEO effort and strategic decision-making to the interests of shareholders. Hence, an understanding of the multiple determinants of the structure and level of CEO remuneration is necessary for achieving efficient labour and equity markets.

The Productivity Commission (2009) categorises the drivers of executive, including CEO, remuneration into supply-side factors and demand-side factors. On the supply-side, the remuneration amount that a CEO will require is influenced by the following factors:

- the costs of accumulating the skills, including education, and experience required to build a professional reputation as a CEO;
- the nature of the job including the effort required to do the job, the risks involved and the non-pecuniary aspects of the job; and
- potential remuneration in alternate comparable positions, whether in listed companies or other organisations in Australia or overseas.

The sensitivity of price (that is, remuneration) to supply depends on the supply of suitable CEOs. On the one hand, there are many people with managerial experience and qualifications and hence the supply pool is large. On the other hand, the quality of possible candidates may vary significantly since only a limited number of people are perceived to have a sufficiently high level of leadership, communication and judgment skills required to be a CEO.

On the demand-side, the price that the company is willing to pay as remuneration is likely to depend on the value of the CEO in terms of the following:

- how effective the CEO is in aligning management's interests with those of the company's shareholders and other stakeholders; and
- the performance of the company (financial, social and environmental) that is within the control of the CEO.

The sensitivity of price to demand is probably limited in the shorter-term, mainly because the value of a CEO, as assessed by the above demand factors, could be difficult to evaluate in the short-term. So price sensitivity could fall back on supply factors concerned with the attributes

of the individual CEO and his or her job (Productivity Commission 2009). For the purpose of this study, CEO attributes can be proxies for professional reputation.

In addition to supply-side and demand-side factors that influence remuneration outcomes is the principal-agent transaction costs issue. Such transaction costs arise in relation to the following matters (Productivity Commission 2009):

- the efficacy of corporate governance structures in place such as the extent to which the CEO can determine his or her own remuneration;
- information asymmetry due to imperfect monitoring of the CEO's performance, unobserved managerial effort, insufficient disclosure of the details of the CEO's remuneration; and
- the sub-optimal setting of the link between remuneration incentives and performance.

Setting an effective remuneration package that is appropriately linked to company performance can be challenging. This is because company performance may to some extent be subject to economic cycles. Friske and Petersen (2001) acknowledge that companies struggle to design optimal employment contracts that compensate appropriately for performance in a volatile market.

The broader business and regulatory environment can also influence CEO remuneration. The nature of business regulatory conditions will have a bearing on CEO remuneration. For example, the net pay that goes into the CEO's pocket will be influenced by the tax regime in place. Where the company operates in a competitive industry, as opposed to a protected industry, the company's performance should be tied more closely with the CEO's performance. In such a situation, the CEO will be under greater pressure to perform well so as to preserve his or her position and reputation, and shareholders will have more incentives to monitor the CEO (Productivity Commission 2009).

The escalation of CEO remuneration in recent decades has been attributed to a number of hypotheses which can be grouped into two broad categories: market-based influences and the managerial power hypothesis as argued by Bebchuk, Fried and Walker (2002).

First, a number of previous studies have attempted to use market-based factors in explaining the increase in executive remuneration. For example, the increasing importance of general managerial rather than company-specific skills leads to such increases (Murphy and Zabojnik 2006). Another market-based factor is posit by Gabaix and Landier (2008) who attribute the increase in USA CEO remuneration between 1980 and 2003 to the increase in the market capitalisation of large companies during that same period. Gabaix et al. (2008) build a model whereby there is a positive relationship between the remuneration of a CEO and that of the size of the company that he or she manages, as well as the size of a reference company in the economy. Company size is measured by market value. Acknowledging that different CEOs have different levels of managerial capability, they match the most capable CEOs with the largest companies so as to maximise the effect of superior CEO capabilities. Accordingly, an increase in the size of all companies in the economy led to an increase in the willingness of companies to pay for more capable CEOs. This higher demand in turn results in increases in executive remuneration. Gabaix et al. (2008) find that their model could predict an increase in CEO remuneration which is consistent with what has been observed in the USA since the 1980s.

Another reason as to why there might be a positive relationship between executive remuneration and company size is given by Gayle and Miller (2008). They posit that most of the increases in executive remuneration within the aerospace, chemicals and electronics industries could be attributed to increases in remuneration components which are sensitive to corporate performance such as shares and options. In addition, they differentiated between what they termed the direct and indirect effects of growth in company size. The direct effect refers to the need for higher remuneration to attract and retain more capable executives at larger companies. This is similar to the explanation given by Gabaix et al. (2008) on why there is a positive relationship between company size and increases in executive remuneration. Gayle et al. (2008) postulate that there is also an indirect effect in the sense that larger companies will face more intense principal-agent problems between owners and managers. To align both parties' interests, performance related remuneration such as shares and options are used. However, this exposes those executives to risk, unlike fixed amount remuneration such as wages. Gayle et al. (2008) further posit that executives are risk averse. Accordingly, executives require a higher level of expected remuneration to offset the uncertainty that they are subjected to. Their findings lead them to conclude that the indirect effect of growth in company size explained most of the increase in executive remuneration although part of the

increase was explained by the direct effect too. In regard to the latter effect, Gayle et al. (2008) argue that the market for managers has become more differentiated which results in an increase in the premium paid to managers of larger companies compared to those of smaller companies. Their findings corroborate the work of other researchers such as Gabaix et al. (2008) and Murphy and Zabojnik (2004).

Second, according to the managerial power hypothesis, executives can influence the terms of their own remuneration packages, and can do so in a way that minimises external scrutiny and criticism because of their ability to exert their power and influence over captive directors in order to extract rent through their remuneration arrangements (Bebchuk et al. 2002). This hypothesis is not without its critique. Murphy (2002) contends that the increase in CEO remuneration is more likely due to an increase in CEO bargaining power rather than due to rent extraction (which requires captive boards) although he concedes that this would be another aspect of managerial power.

1.3 Objectives and research questions

The renewed interest in executive remuneration, particularly CEO remuneration, in light of the recent global financial crisis (GFC) leads to the question: Is CEO remuneration excessive or can it be justified on grounds of the established reputation of individual CEOs, the performance of the company, the quality of the internal governance structures and the ability of shareholders to have an influence? This question provides the impetus for this study. To answer this question, an understanding of the multiple drivers of executive remuneration is required.

There have been numerous studies in the past to understand what drives executive remuneration with mixed results. The predominant evidence to date has been on drivers related to conventional company financial performance measures such as return on equity, as well as the controlling effects of corporate governance mechanisms and ownership structure. However, the arguments outlined in the previous section point to other factors that affect CEO remuneration. In particular, there is the supply-side factor of CEO attributes, and demand-side factor of company performance from a broader stakeholders' perspective.

This study seeks to extend the literature on the modelling of drivers of CEO remuneration by adding two new factors to the traditional models. The first factor is the CEO attribute of ‘professional reputation’. The second factor is the company performance measure of ‘productivity’. This leads to the following objectives of this study:

Objective (1): To develop a comprehensive model of the multiple determinants of CEO remuneration that extends the factors of company financial performance and governance structures in traditional models by adding the factors of CEO reputation and company productivity.

Objective (2): To provide evidence on the comparative effects of these multiple determinants on fixed, performance-based and total CEO remuneration during a period of financial market volatility.

Underlying these objectives is a set of specific research questions to be addressed in this study:

RQ1: Is there a relationship between CEO professional reputation and the type and extent of CEO remuneration?

CEO professional reputation is expected to affect the fixed remuneration component in particular (Niap and Taylor 2012))

RQ2: Is there a relationship between the quality of the company’s remuneration committee in terms of its independence, and the type and extent of CEO remuneration?

RQ3: Is there a relationship between the quality of the company’s remuneration committee in terms of its diligence, and the type and extent of CEO remuneration?

A remuneration committee that has strong attributes of independence and diligence as the company’s primary governance mechanism for monitoring and proposing the remuneration packages of the company’s top executives, would be expected to seek a link between the levels of CEO reputation and company performance and the level of CEO remuneration (for example, Hermalin and Weisbach 2001).

RQ4: Is there a relationship between company performance and the type and extent of CEO remuneration? This question considers two aspects of company performance as follow.

RQ4.1: Is there a relationship between conventional company financial performance and the type and extent of CEO remuneration?

Company financial performance, whether earnings-based or cash flow-based, is expected to affect the performance-based component of CEO remuneration in particular. (for example Jensen and Murphy 1990)

RQ4.2: Is there a relationship between company productivity performance and the type and extent of CEO remuneration?

Company productivity is considered in terms of the productivity of physical assets, labour and intellectual capital. As such, it has relevance to wider stakeholders. Whether these components of productivity performance affect fixed, performance-based or total CEO remuneration is less predictable because of the absence of prior evidence on these relationships (Niap, Taylor, Morley and Kim 2012).

RQ5: Is there a relationship between the concentration of the company's shareholders and the type and extent of CEO remuneration?

Companies with a greater presence of large shareholders, who can exert pressure on the board, are expected to have greater influence through the board on decisions about the CEO's remuneration (for example, Shivdasani 1993).

1.4 Motivation and the literature gap

This study is first motivated by the belief that the focus on factors determining the types and levels of CEO remuneration has been too narrow. To achieve a more comprehensive understanding of the determinants of CEO remuneration, the factors of CEO professional reputation and company productivity need to be integrated into the models developed to date. A review of the existing literature reveals that there is a gap on how CEO professional

reputation, and productivity as an alternate measure of company financial performance, impact on the various components of CEO remuneration. Prior studies, which have been conducted in the USA, studied the link between CEO reputation and stock-based compensation (Milbourn 2003) as well as the relationship between CEO reputation and earnings quality (Francis, Huang, Rajgopal and Zang 2008). This study would help fill that gap in the pay-performance literature concerning the use of productivity as a performance measure.

Moreover, this study seeks to incorporate a more comprehensive modelling of the effects of corporate governance factors on CEO remuneration. Previous research has examined different governance mechanisms by focussing mainly on only one area of governance variable(s), such as the characteristics of the board of directors (Hermalin et al. 2001) or concentration of ownership (Shivdasani 1993). However, controlling the agency problem, the conflicting interests of management and shareholders, depends on not solely on the strength of the board of directors and its committees, or the power of the shareholders, but on the efficiency of a bundle of monitoring mechanisms (Rediker and Seth 1995; Agrawal and Knoeber 1996). This criticism can be extended to a study which focuses on the drivers of CEO remuneration, being only CEO professional reputation and company financial performance. Accordingly, this study is extended to include a consideration of corporate governance factors that embraces a monitoring aspect of both the board and the shareholders, namely, the monitoring effect of the board's remuneration committee and substantial shareholders.

The second motivation arises from the setting for this study. Excessive executive remuneration has attracted immense public attention due to the GFC which occurred in 2008 (Stiglitz 2010), hence the period of this study from the year 2007 to 2009. As can be seen in Table 1.1 below, there was a downturn in Australia's economic activity, as represented by the annual change in Gross Domestic Product (GDP), from 2007 to 2009 which is consistent with the GFC period. The extent of correlation in the short-term between CEO remuneration and company financial performance is expected to be challenged during a period of severe economic downturn. During a period of downturn in corporate performance whereby a cost-cutting strategy would be one of the strategies required such as labour and dividend cost-cutting, how is CEO remuneration adjusted? Is this an environment in which CEO value to the company increases because difficult and urgent strategic adjustments require strategic

leadership? Or is this an environment in which the CEO must lead by example and take a personal remuneration cut? The answer could depend on the CEO reputation. For a CEO with a high reputation, it would presumably be both. Also, it is expected that a CEO remuneration would depend on company performance especially company productivity. If company performance drops, CEO remuneration should adjust downwards. There is a lack of prior evidence on the extent to which companies make significant adjustments to CEO remuneration when company profitability or liquidity drops due an event like the GFC, or whether they switch to alternative criteria to justify CEO remuneration such as company productivity performance or CEO reputation.

Table 1.1 Annual GDP change in Australia from 2005 to 2011 (ABS 2013)

Year	2005	2006	2007	2008	2009	2010	2011
GDP (%)	2.3	2.3	4.4	2.7	0.3	3.2	1.1

The third motivation relates to the issue of the effectiveness of aspects of the current corporate governance structures required by securities regulators. Authors such as Clarke (2010) question whether there is a crisis in the Anglo-American corporate governance structure. Leung and Cooper (2003), whilst acknowledging the need for effective corporate governance as a safeguard against corporate failures and creative accounting and inappropriate executive remuneration, are of the view that corporate greed and materialism is another factor to consider.

Finally, there is a lack of evidence on how CEO remuneration is packaged. This study can provide improved evidence on CEO remuneration packaging because in the current regulatory environment, companies are required to disclose key management personnel (KMP) remuneration in greater detail in their audited annual reports; unlike prior to 2004 when disclosures pertaining to executive remuneration were generally of a low quality (Clarkson et al. 2006). Munter and Kren (1995) argue that constructing an efficient incentive remuneration design is important in aligning the principal's (shareholders) interests with those of the agents (management or executives). Laux and Laux (2009) state that the surge in CEO remuneration and accounting fraud reflect a failure of corporate governance; and therefore a better understanding of the relationship between CEO remuneration, corporate governance and earnings manipulation is important. In this study, it is contended that there is another factor, CEO professional reputation, which drives, at least partially, CEO

remuneration. Therefore, an understanding of what drives CEO remuneration would aid in constructing an efficient remuneration package, for auditors to better assess the control environment of a company, and for regulators to design effective regulations. If CEO remuneration is driven by the CEO's professional reputation, the CEO would be more inclined to behave in a manner that would enhance his or her good reputation and therefore is more likely to behave ethically.

1.5 Regulatory context in Australia

The regulatory setting concerning CEO remuneration in Australia goes beyond the CEO alone. It covers the remuneration of other top executives and the company directors. An introduction is provided to this regulatory setting.

1.5.1 Recent regulatory history of directors' and executives' remuneration

The requirements for disclosure of key management personnel (KMP) remuneration in Australia have widened markedly since the 1980s (Productivity Commission 2009). Currently, the disclosure of directors and executives' remuneration in Australia is regulated by Australian accounting standards (AASB standards), corporation law and ASX guidelines on corporate governance (Liu et al. 2008). A brief history of the evolution of Australian accounting standards and remuneration disclosure regulations and guidelines follow.

Prior to October 1986, companies were only required to disclose the collective remuneration, by bands, of all executives earning over \$100,000 per annum. From 1986 to 1987, companies were required to list all directors and their remuneration, and the five highest paid executives in the company and their total remuneration. 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 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 (Nelson, Gallery and Percy 2008). 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 Disclosures" 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 globalisation of business led to Australia deciding to adopt international accounting standards, which are collectively known as 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 Disclosures' in 2004 which was issued in July 2004 and was applicable from annual reporting periods commencing from 01 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'.

The Company Law Review Act 1998 was introduced effective from 1 July 1998 (Nelson et al. 2008). In addition, the Corporations Act 2001 contained disclosure requirements in regard to directors' and executives' remuneration. Furthermore, the Corporate Law Economic Reform Program (CLERP) Act 2004 was introduced as a result of the corporate collapses around 2001 (Nelson et al. 2008). In June 2004, amendments were made to the Corporations Act which expanded director and executive remuneration disclosure requirements, making it a requirement for listed companies to submit a Remuneration Report on directors and executives' remuneration to shareholders for an advisory, nonbinding vote at the Annual General Meeting (AGM) under s300A of the Corporations Act 2001.

Therefore, it can be seen from the above that remuneration disclosure requirements have changed substantially over time which makes comparison of CEO remuneration prior to 2004 extremely difficult.

1.5.2 Components of CEO remuneration packages

In Australia, company accounting practices are regulated by the Corporations Act 2001 and accounting standards issued by the Australian Accounting Standards Board (Lee 2009). The Australian Accounting Standards Board (AASB) through Australian accounting standard AASB 1046 'Director and Executive Disclosures by Disclosing Entities' acknowledged that directors and executives hold positions of responsibility within a company and are entrusted with the governance of the company (ICAA 2006). Accordingly, the AASB realised that it is necessary to have a high level of accountability via disclosure in the financial report of directors and executives' transactions with the company and the benefits obtained as a result of their positions in the company. The AASB later used the term key management personnel (KMP) in Australian accounting standard AASB 124, which replaced AASB 1046, since it considered that this term encompassed all the relevant people who are responsible for the governance of the company (ICAA 2009). KMP is defined in AASB 124 as those persons who have the responsibility and authority to plan, direct and control the activities of the company whether directly or indirectly. KMP include directors, both executive and otherwise, of the company. This definition is similar to that under section 300A of the Corporations Act (ICAA 2009). Remuneration is defined under AASB 124 to include all employee benefits as defined in AASB 119 and can be categorised as follow:

- short-term employee benefits such as wages and bonuses which are payable within twelve months from period-end;
- post-employment benefits such as pensions and other retirement benefits;
- other long-term employee benefits such as long-service leave;
- termination benefits; and
- share-based payments as defined in AASB 2.

Interestingly, AASB 124 adopted the term 'compensation' rather than 'remuneration' although it recognises that both words refer to the same concept. AASB 124 further states that all references to directors' and executives' remuneration in the Corporations Act are construed to be equivalent to the term 'compensation' as used in the accounting standard. Any non-remuneration related transactions with directors and executives such as loans by the companies to directors and executives would be considered as related-party transactions by the accounting standards as 'other transactions' (AASB 124 and AASB 1046).

1.5.3 ASX principles of good corporate governance

In 2007, the ASX Corporate Governance Council released the second edition of the Principles and Recommendations following a review of the first edition which was released in 2003. Three recommendations were removed from the revised principles since they are now reflected in the accounting standards and the Corporations Act. And, the ten principles espoused in the first edition were collapsed into eight principles. However, there were no significant changes from the first edition that are relevant to this study. The key recommendations that are relevant to this study are as follow:

- companies should establish the roles and responsibilities of the board and management;
- a majority of the board should comprise of independent directors;
- the chair of the board should be filled by an independent director;
- the roles of CEO and chair should not be exercised by the same individual; and
- the board should establish a remuneration committee.

The ASX (2007) states that a company needs to balance its desire to attract and retain directors and senior executives against its interest not to pay excessive remuneration when determining the structure and level of remuneration. It also emphasises the importance of ensuring a clear relationship between remuneration and performance. Regardless of whether or not a separate remuneration committee exists, the full board is ultimately responsible for a company's remuneration policy.

The ASX (2007) recommends that the remuneration committee should comprise of at least three members, the majority of whom should be independent directors, and be chaired by an independent director. The remuneration committee's responsibilities ought to include a review of and recommendation to the board in regard to, among others, the following:

- the remuneration framework for directors;
- the company's remuneration policies for senior executives; and
- senior executives' remuneration and incentives.

Furthermore, no individual should be directly involved in deciding his or her own remuneration.

The ASX recommends that the company should design its remuneration policy so that it:

- motivates senior executives to strive for the company's long term growth and success;
- sets a clear relationship between senior executives' remuneration and performance.

The ASX also recommends a balance between fixed and incentive (or performance) remuneration in executive directors' and senior executives' remuneration packages to reflect the short and long-term performance objectives relevant to the company.

Under the Corporations Act, companies need to disclose in detail executive remuneration policies in their remuneration reports since these are subject to an advisory vote by the shareholders. However, the Corporations Act and the ASX Listing Rules, generally speaking, do not require companies to obtain shareholder approval for equity-based incentive remuneration plans relating to senior executives who are not directors.

The ASX has set out guidelines on how to formulate remuneration packages, and in particular the basis for determining the various components of remuneration. For fixed remuneration, factors that may be taken into consideration are the company's legal and industrial obligations and labour market conditions relative to the size of the company. Core performance expectations and requirements should be reflected in this component. For performance-based remuneration, incentive plans should be based on appropriate performance benchmarks which measure relative performance. Any significant improvement in company performance should be rewarded appropriately. The ASX believes that this component, if linked to clearly specified performance targets, can be an effective tool in enhancing the interests of the company as well as its shareholders. In regard to equity-based remuneration which includes stock options, the ASX believes that appropriately designed schemes can be effective when linked to performance hurdles or objectives. However, there are limitations since such schemes may promote behaviour on the part of senior executives that seeks to gain in the short term at the expense of the long term prospects of the company. For termination payments to CEO, these should be agreed in advance. Any agreements

should clearly specify performance expectations and provisions in the case of early termination, and prohibit payment for removal due to misconduct.

1.6 Structure of the thesis

Chapter one provides an introduction to this thesis as well as the objectives of, and the motivation for, this research. It also gives an introduction to the multiple drivers of CEO remuneration and the regulatory environment in Australia.

Chapter two is a review of the existing literature pertaining to reputation, corporate governance and corporate performance. In regard to reputation, the focus is on executive and director reputation, as well as CEO professional reputation as a subset of CEO personal reputation. For corporate governance, the emphasis is on the corporate governance model, underlying theories and mechanisms relating to executives and directors' remuneration, the remuneration committee and ownership concentration. In relation to corporate performance, both conventional corporate financial performance and company productivity are discussed.

Chapter three conceptualises the framework for this study, develops the hypotheses to address the research questions as discussed in chapter one, and identifies the control variables relevant to this research.

Chapter four presents the philosophical approach underlying the research design and variable measurements for this study. Both dependent and independent variables are defined. How the CEO professional reputation index is constructed is also explained in this chapter. This chapter then proceeds to explain how the sample is selected and the justification for the sample size. Next, how the data are sourced and checked for normality, multicollinearity and correlation, as well as for errors such as missing data, are also detailed. Lastly, this chapter explains why panel data analysis is preferred over pooled data analysis, and when to use fixed effects and random effects panel data analysis.

Chapter five reports the results of the empirical analysis which tests models of the relationship between CEO remuneration and the following:

- CEO professional reputation;

- corporate governance mechanisms, specifically the remuneration committee and ownership concentration;
- corporate performance, both conventional corporate financial performance and company productivity; and
- the control variables, being company size, industry, volatility of company earnings, and market-to-book ratio.

In chapter six, the hypotheses test results are summarised and a conclusion is drawn on the overall results. Furthermore, the implications of this study and its contributions to the literature are discussed. In addition, the limitations of this study are identified and suggestions for future research provided.

Chapter 2. LITERATURE REVIEW

2.1 Introduction

In this study, the multiple determinants of CEO remuneration are associated with aspects of the reputation of the incumbent CEO, corporate governance mechanisms and corporate performance. Therefore, the focal literature will be reviewed in this chapter within these three bodies of literature. First, the literature on reputation at the personal level of key management personnel (KMP) will be reviewed, particularly the use of proxy measures for the notion of ‘professional reputation’. Second, the literature on corporate governance, both its underlying theories and range of practices, will be addressed. This is a very large body of literature, so the review will be limited in scope to relevant matters of monitoring of agents under agency and stewardship theoretical perspectives, the duties and roles of company ‘officers’ as agents, the remuneration committee’s effectiveness characteristics, and the moderating role of blockholders. Third, the literature on corporate performance, and its relationship to KMP remuneration, will be reviewed. This literature mainly considers accounting and market-based performance measures. This chapter will extend the review to corporate productivity concepts and measures that have a stakeholder orientation.

Before undertaking a review in these three bodies of literature, this chapter will begin with a brief review of the debate about the setting of KMP remuneration packages.

2.2 Debate about KMP remuneration packages

The issue has been debated concerning whether or not an ideal, or even efficient, KMP remuneration package can be set. The ‘ideal’ remuneration structure varies across different companies and individuals because their risk preferences differ. For example, start-up companies are less risk averse than established companies, and some KMPs prefer greater certainty in relation to their remuneration and are willing to trade off upside rewards (for example capital gains from share price moving upwards) for less downside risks (for example, capital loss from a decline in share price). The Productivity Commission (2009) states that

the complexity of KMP positions varies depending on the skills and knowledge required for the job, the responsibility that comes with the position and the characteristics of the job. It refers to Hay Group data which shows that CEOs who earn significantly more are those who are better able to influence the performance of their companies and whose roles require more skills. One component of remuneration, where its structuring has been likened to art more than science, is incentive remuneration (Productivity Commission 2009). Incentive remuneration usually comprises the following:

- the award of remuneration in the form of cash, shares or options when performance hurdles are met in the short term (typically one year) or long term (usually around three years). Short term performance hurdles usually relate to the company's financial performance, business strategy implementation and or occupational health and safety outcomes. Long term performance hurdles, in contrast, often relate to broader market metrics such as total shareholders return; and
- the award of shares or options with holding requirements. Payment in equity directly links part of the KMP's wealth to the share price as well as the dividends of the company.

The various incentive remuneration components and performance metrics, and combinations of them, have different incentive effects. For example, options provide more upside reward but little downside risk compared to shares. Once the share price is greater than the option exercise price, there is little incentive for KMP to push for an incremental increase in the share price. On the other hand, paying KMP large parcels of shares can promote the alignment of management's interests with shareholders' interests. Unlike fixed remuneration which would be paid regardless of performance, the granting of performance-based remuneration has the potential to reduce agency costs. Agency costs here include not just the costs of KMP making decisions that promote their own self-interests, but also the costs incurred in monitoring these KMP to ensure that this does not happen. Accordingly, larger companies, by virtue of having more dispersed ownership and the relatively greater influence that KMP have over company assets, tend to rely more on incentive remuneration.

Companies, in general, incur greater monetary cost from using incentive remuneration compared to fixed remuneration. This is because of the additional risks to the KMP. Firstly, KMP will be uncertain as to the level of remuneration that they ultimately receive because

performance hurdles may not be trivial and may be subject to forces outside their control. Secondly, such remuneration can constrain the KMP ability to diversify their wealth and thus expose them to portfolio risk. Therefore, KMP will require a risk premium for incentive remuneration, unlike for fixed cash remuneration. This premium will vary with the risk preference of the KMP and the uncertainties relating to the share price volatility and the performance hurdles for the different companies.

The Productivity Commission (2009) is of the view that the complexity of some incentive remuneration arrangements in more recent times may have allowed unanticipated excessive upside, especially during the share market boom prior to 2008, but at the same time distorted the incentive effects for KMP. Some KMP are of the view that incentive remuneration which is linked to the share market performance is akin to striking a lottery in that they may receive large gains at a huge cost to the company even though the incentive effect is minimal. Furthermore, short term incentive remuneration that is linked to inappropriate performance hurdles encouraged excessive risk-taking in some instances in the finance industry.

It is worth noting that the use of equity-based long-term incentive remuneration poses a problem due to its valuation. This is because the accounting value, being the estimated value that companies place on options or shares for accounting purposes at the date that they are granted, may differ greatly from their realised value when they vest (Productivity Commission 2009). It is not clear whether these accounting values tend to over or understate the realised values. However, it is likely that equities granted as remuneration prior to the share market boom would have led to the realised values being higher than their accounting values. Similarly, equities granted as remuneration in 2005 and 2006 prior to the share market decline during the GFC would probably have led to accounting values overstating the subsequent realised values, if they were vested at all. Therefore, data on the equity-based component of remuneration needs to be interpreted with care.

For this study, analysis is based on the reported accounting value of equity-based incentive remuneration, which is consistent with the approach taken by the Productivity Commission (2009). The rationale for this is that companies do not report the realised value of such incentives which were granted in prior years and thus it is not possible to go back and adjust the data. Furthermore, remuneration data contained in the annual reports do not contain sufficient information to be able to estimate the value of these incentives using a consistent

valuation methodology. Even if such information were available, there is no one right way of valuing these equity-based long term incentives because of the assumptions involved in the valuation.

Setting an effective remuneration package that is appropriately linked to company financial performance can be challenging. This is because company performance may to some extent be subject to economic cycles. Friske et al. (2001) acknowledge that companies struggle to design optimal employment contracts that compensate appropriately for performance in a volatile market.

2.3 Reputation

The first notion to consider in this study as a determinant of CEO remuneration is reputation. The business literature has perceived reputation at the organisation level and the personal level of a manager or director. This study focuses on the personal level of the CEO. The literature suggests that CEOs are selected by the board of directors based on selection criteria which includes the existing personal reputation of the CEO (Hermalin and Weisbach 1988; Allgood and Farrell 2003). Therefore, this study seeks to explore whether CEO remuneration is associated with her or his reputation.

2.3.1 Personal reputation

Personal reputation, according to the Cambridge Advanced Learner's Dictionary (2010), is the opinion, or how much respect, that people in general have of someone due to that person's past character or behaviour. This definition is similar to that in the management literature where individual, or personal, reputation is based on a shared perception of the individual's behaviour or attributes by others (Ranft, Ferris, Zinko and Buckley 2006).

Reputation is usually associated with achievement, be it in the form of responsible behaviour or consistent high performance. This achievement can then establish an element of trust that others have of these individuals that they will behave consistently in that manner in the future. Consequently, a feeling of predictability and comfort is developed. Because reputations can

be useful or rewarding, people are motivated to actively develop and maintain the impressions that others form of them (Ranft et al. 2006). Management, broadly speaking, are concerned about their individual reputation in the labour market. This is because if the company's performance, in which the managers are serving, is not satisfactory, it will become more difficult for them to sell themselves (Azim 2008).

This concept also holds true for directors. Yermack (2004) argues that directors' concern about their reputation mitigates agency problems. Authors such as Fama (1980) and Kreps, Milgrom, Roberts and Wilson (1982) contend that directors and managers with significant reputations at stake are not likely to engage in opportunistic rent-seeking behaviour, since they have more to lose in terms of their own human capital (Francis et al. 2008). Fama and Jensen (1983a) hypothesise that there is a market for outside directors' services and that outside directors therefore have an incentive to develop their reputation to signal to the market that they are experts in decision control. Incentives related to directors' reputation include not just the accumulation of directorship positions on additional boards and remuneration, but also the threat of replacement (Yermack 2004).

When discussing reputation, the notion of celebrity also needs to be considered because of the link between these two (Ranft et al. 2006). A celebrity, as defined by the Cambridge Advanced Learner's Dictionary (2008), is someone who is famous especially in the entertainment industry, or refers to the state of being famous. Celebrity usually refers to social actors who attract widespread attention and elicit positive emotional responses from the public (Ranft et al. 2006). From a marketing perspective, celebrity is the result of the interaction between notoriety and entertainment. It can be developed via the mass communication of selective and more often than not manipulated information regarding an individual's successes, skills, idiosyncrasies and style. This in turn creates a persona that may then capture the public's attention. For example, Sprint Nextel Corporation attempted to focus the media's attention on the long tenure of its CEO, who had been in that position for 17 years. This was intended to convey the impression of stability, integrity and competence. There are two aspects to celebrity. Firstly, celebrity is a phenomenon that arises as a result of media attention. The media has a tendency to explain the performance of a company as though it is due mainly to the efforts of the CEO. In addition, the media seems to focus its attention on large and powerful companies such as the Fortune 500 companies. Secondly, the fame may have been rightly earned due to past successes and skills that the individual

possesses (Ranft et al. 2006). Murray and White (2005) argue that the primary driver of a good reputation is good performance.

CEOs with strong reputations can command higher remuneration packages relative to their peers (Ranft et al. 2006). Wackerle (2001) notes that there are companies which recruited CEOs based almost entirely on those people's reputations. In demand are CEOs who have worked in the Fortune 500 companies. As well as higher remuneration is a commensurate increase in power and autonomy in their roles (Ranft et al. 2006). This may be due to the perception that these CEOs are important and also because of the trust placed in them that they will behave in a manner appropriate to the well-being of their companies. The increased power and autonomy allows the CEOs to make the changes that they deem necessary as well as enhance their reputations further by meeting market demands. These market demands are the expectations that the companies and the public have of the CEOs based on those CEOs' reputations. The drawback is that these CEOs are given more latitude in their actions. This could then lead to an increase in the amount of managerial discretion that these CEOs are permitted which deviate from normally expected rules of conduct. For example, the CEO of Apple Computer Incorporated (Apple), Steve Jobs, was brought back to save the company from failure. He had a reputation as an innovator of quality technology such as personal computers and digital multi-media and his reputation was integral in lifting the reputation of the company as a leading innovator. Rehiring the CEO gave a signal to the market that Apple would once again be a prominent company in the information technology industry by virtue of the CEO's personal reputation. Due to his personal reputation and celebrity status gained as a result of his personal characteristics, prior experience and media coverage as the saviour of his company, he appeared to have limited accountability. An example was research and development expenditure at Apple Computer Incorporated was several times greater than the industry average (Ranft et al. 2006). This increased autonomy and power may tempt CEOs to behave in their own self-interests which may result in breaches of the law as in the case of Tyco.

Gaines-Ross (2003) contends that CEO reputation can be built. Five factors that enhance a CEO's reputation are credibility, having a code of ethics, good communication, the ability to attract and retain a quality management team, and the ability to motivate and inspire employees. Credibility is earned when CEOs are consistently truthful and deliver on their promises. Credibility is also earned when CEOs match their behaviour with the values that

they espouse. Setting and abiding by a code of ethics is also essential especially since the general public expects ethical behaviour. While ethical issues are usually not straightforward, CEOs need to act in good faith according to established ethical guidelines and be able to justify that their actions are based on ethics. Gaines-Ross (2003) argues that it is necessary for CEOs to develop a reputation for ethical behaviour because they are a model of appropriate behaviour for the employees. Furthermore, Farkas and Wetlaufer (1966) argue that CEOs are ultimately responsible not just for their own actions and decisions but also for those of every individual employee in their respective companies. Therefore, CEOs themselves need to follow the code of ethics that they espouse for their companies since action speaks louder than words. In addition, CEOs should have excellent communication skills. CEOs ought to be able to communicate well with external parties, especially with high-visibility outside audiences, such as analysts and the media. However, CEOs need excellent internal communication skills too. The various divisions within a company have information which is specific to their respective divisions. The human resources division would know employees' views whereas the marketing division would understand customers. The public relations and public affairs divisions would know how the media, and what the regulators and community leaders think respectively. According to Murray et al. (2005), public relations is utilised frequently to enhance reputations. Likewise, the investor relations division would comprehend how institutional investors and financial analysts think (Gaines-Ross 2003). Therefore, CEOs need to be able to gather all available information and generate a comprehensive analysis from them that would be meaningful to the company as a whole. In addition, it helps for CEOs to have a high-level of emotional intelligence that comprise the elements of empathy, social skills, self-awareness, motivation and self-discipline, all of which revolve around the ability of a leader to relate to others (Gaines-Ross 2003). Ranft et al. (2006) are of the view that effective CEOs possess the right characteristics. They are able to correctly read, conform to and react appropriately to the different situations. In addition, they can control and express their emotions so as to project the proper image. Furthermore, CEOs should seek counsel (Gaines-Ross 2003). This can be from their chief operating officers, chief financial officers, spouses, previous CEOs and or from outside consultants (Gaines-Ross 2003).

The five factors mentioned above are classified by Gaines-Ross (2003) as top-tier drivers of CEO reputation. Second-tier drivers would include caring for the customers and the ability to:

- effectively manage crises or business downturns;

- increase shareholder wealth; and
- communicate a clear vision for the company to external parties, and execute that vision.

Third-tier drivers of CEO reputation would include being innovative, a deep understanding of (global) markets, being a leader in the industry, upholding corporate citizenship and having a well-defined internet strategy (Gaines-Ross 2003). Good corporate citizenship involves being socially responsible which is good from both a moral as well as a business perspective. By partnering with outside organisations, especially with governmental or quasi-governmental groups or not-for-profit organisations, CEOs can obtain third party endorsements which lend legitimacy to their corporate initiatives (Gaines-Ross 2003). For example, a CEO of Cisco Systems collaborated with the United Nations Development Programme in an attempt to help eradicate extreme poverty via the use of the internet. In addition, receiving awards in recognition for their leadership would help build CEOs reputation. CEOs also need to heed business rankings such as Fortune's Most Admired Companies and Best Places to Work survey and the Reputation Institute's Reputation Quotient. The Reputation Quotient has been used to measure corporate reputations in more than 26 countries around the world (Riel and Fombrun 2007). Corporate reputations are measured based on emotional appeal, products and services, workplace environment, vision and leadership, financial performance and social responsibility (Alsop 2004). Although it may be contended that these rankings appear to be flawed and superfluous, they have legitimacy in that these rankings reflect, whether true or not, independent and objective evaluations from third parties (Gaines-Ross 2003). Therefore, stakeholders may perceive such third party endorsements as credible evidence of the management's and company's performance. Another way for CEOs to develop their reputation is the ability to reinvent their companies continuously when the need arises. This is important because the marketplace is subjected to significant shifts, especially technological changes, in most if not all industries. The former CEO of GE was reputed to have reinvented GE at least five times in his 20 years as the CEO (Gaines-Ross 2003). To be able to perform their duties well, CEOs also need effective training and leadership training in particular. Training is a combination of formal and on-the-job training as well as advice from consultants and former CEOs. Although formal training may not be a complete substitute for practical experience, it helps expose CEOs to a full gamut of challenges and issues that may be encountered in the course of duty, which practical experience alone may not. This formal

training becomes more important due to the more rigorous financial and ethical standards that apply today.

Granting interviews to the media is a low priority with a new CEO unless an important business event necessitates it. Although the media can be an effective communications channel if managed properly, it can also be a recipe for disaster if the new CEO has not yet obtained a good understanding of the corporate workings of the company (Gaines-Ross 2003). This reinforces the argument that the media is not a good proxy for CEO personal reputation.

The use of press coverage as a proxy for CEO reputation is not without criticism (Lafond 2008). A more detailed discussion of the problems with using media coverage as a proxy for CEO reputation is therefore warranted. One problem with using media coverage as a proxy for CEO reputation is that this is based on the assumption that all media coverage is good coverage. In reality, media coverage may be good, or bad, or both. Furthermore, media coverage is at best an external assessment, by editors and reporters, of CEO reputation. It is unclear to what extent media attention influences people's perceptions. For example, research by Liu et al. (2008) indicates that there is not much support that media attention influenced the extent of executive remuneration disclosure. However, if the role of the CEO is to maximise shareholder value, shareholders should be the ones to assess the CEO's reputation. Maximising shareholder value is quite different from garnering media coverage. A measure that can capture the unique portion of the company value that can be attributed to the CEO would be an ideal measure of CEO reputation. In fact, Lafond (2008) contends that CEO reputation is more likely to be positively linked to increases in company performance or changes in company performance. In addition, one would expect more reputable CEOs to earn higher remuneration, which is an indication of how the labour market values the CEO, rather than garner more media coverage. Another problem with media coverage as a proxy for CEO reputation is the possibility that there may be bias in the press coverage. Using press coverage as a proxy is based on the questionable assumption that all CEOs are equally likely of getting press coverage as well as that the media has made a correct assessment of every CEO's reputation. However, what is not known or controlled for are the factors that influence reporters' choice of news topics to cover as well as editors' choice of news articles to publish. Lafond (2008) argues that since reporters work for media companies which are interested in making money, they are more likely to report on news that would be of interest to their consumers (readers). In his study, Miller (2006) finds that there are systematic biases in

media coverage in that they are biased toward coverage of more visible companies, that is, larger companies as well as towards accounting fraud. For example, would BHP Limited rate more mention in the media than another ASX Top 200 company such as Centamin Egypt Limited? In addition, a study by Core, Guay and Larcker (2005) finds that the media tends to engage in sensationalism when reporting on remuneration-related issues such as the CEO of Sunbeam for willing to pose with a machine gun. Events such as retrenchments and mergers also tend to rate a mention in the press although it is questionable how this can contribute to a CEO's reputation. Therefore, this raises question as to whether the differences in media coverage can be attributed to the differences in CEO reputation. Last but not least is the inability to separate the CEO from the company when using media coverage as a proxy for CEO reputation (Lafond 2008). Does a CEO rate a mention in the media because of that CEO's reputation or is it because that CEO works for a large, relatively speaking, company? Discussion about media coverage now needs to include media due to the digital revolution such as the use of social media (for example Twitter). These forms of media would be subject to media bias too, as discussed above. An additional risk with such online information is that such information may be untrue for example a fake profile of a person (Wright 2013). Lafond (2008) also argues that attempts to substantiate measures of CEO reputation through a series of validation tests and other econometric measures cannot turn a poor proxy for CEO reputation into a good one. There should be some theoretical and logical justification to validate any measure of CEO reputation.

2.3.2 Corporate reputation

Corporate reputation is defined by Ranft et al. (2006) as an evaluation of a company by others over a period of time. Both personal reputation and corporate reputation share certain common themes (Ranft et al. 2006). Accordingly, a review of the literature on corporate reputation is warranted since it aids in further understanding the concept of personal reputation. The reputation of a company is not formed solely from advertising (Riel et al. 2007) but more on deeds rather than impressions (Bromley 1993; Fombrun and Riel 2004). Bromley (2000) argues that people's impressions of a company are affected by three levels of information processing:

- at the primary level which is based on personal experience;

- at the secondary level which is based on comments from friends and colleagues about the company or its product; and
- at the tertiary level which is based on information from the mass media. This includes paid advertising as well as unpaid publicity.

Direct personal experience has the largest influence on reputation and bad stakeholder experiences can cause serious damage to reputation (Murray et al. 2005). However, it also tends to be the most limited, obviously (Bromley 2000). Most of the information that influences reputation would come from other people and the mass media. Insights from psychology reveal that reputation is created when the information about the company stimulates awareness of the company, captures the audience's attention and generates understanding and retention (Riel et al. 2007).

From an economics perspective, reputations are viewed as signals or traits that are used by companies to gain a competitive advantage (Riel et al. 2007). Signalling theorists focus on the informational content of reputations whereas game theorists describe reputations as character traits which differentiate between types of companies and which can explain their strategic behaviour. However, both groups concur that reputations are essentially external parties' perceptions of the companies, which is consistent with the view held by psychologists (Riel et al. 2007).

Weigelt and Camerer (1988) comment that in game theory, the reputation of a player is based on others' perceptions of the player's values and this then dictates that player's choice of strategies. Under game theory, reputations generate perceptions among stakeholders and competitors about what a company is, what it does and what values it upholds (Riel et al. 2007). The efficient market hypothesis states that all information in regard to a public-listed company is supposed to be freely available and hence there is no necessity for specialised financial communication (Riel et al. 2007). However, in the real world, there are gaps in the type, quality and quantity of information available to different types of investors. In addition, there are competitive advantages for companies and investors alike not to disclose private information that may affect a company's future performance (Riel et al. 2007). Therefore, because of this information asymmetry, external observers are forced to depend on proxies to describe rivals' preferences and the courses of action that they are likely to take. For example,

outside investors would be less informed about a company's future actions than management. Therefore, a positive corporate reputation would increase investors' confidence that management would behave in a manner that is consistent with having a positive reputation.

Under signalling theory, reputations are information signals to observers that are meant to increase their trust and confidence in the company's products and or services. This is because many features of the company and its products and or services are not easily observed. Therefore, management can strategically utilise a company's reputation to signal the attractiveness of the company and its products and or services (Riel et al. 2007). According to Shapiro (1983), high-quality producers may invest in reputation building so as to signal the quality of their products where that is not readily observable. Similar dynamics apply in the labour and capital markets. Companies may be willing to pay a premium price for auditors and consultants with good reputation in order to signal their credibility and probity to stakeholders. That is, they rent the reputations of their agents, the auditors and the consultants (Riel et al. 2007). Likewise, management attempt to signal their financial performance to investors by trying to smooth quarterly earnings and maintaining high dividend payout ratios even if earnings fluctuate (Brealy and Myers 1988).

From a strategic management perspective, reputations are viewed both as assets and mobility barriers (Caves and Porter 1977). The positive reputation of companies among suppliers and customers is considered as a source of competitive advantage (Porter 1980). Strategists share the same view as economists that established reputations generate competitive benefits to companies and impede mobility because they are difficult to duplicate (Riel et al. 2007). Reputations act as mobility barriers because they circumscribe companies' actions and competitors' reactions (Fombrun and Zajac 1987). And reputations are difficult to imitate because they are derived from the unique internal features of the respective companies (Dutton and Dukerich 1991). In addition, it takes time for reputation to form in the minds of observers. Barney (1991) contends that the development of a positive reputation, in general, depends upon specific, difficult-to-imitate historical settings. However, empirical studies have proved that once coalesced, it is extremely difficult for observers to change their reputational assessments (Wartick 1992). This inert characteristic of reputations makes them valuable intangible assets (Cramer and Ruefli 1994 as cited in Riel et al. 2007).

Ranft et al. (2006) considers reputation, whether it is personal or corporate reputation, as an intangible asset that can enhance competitive advantage. For instance, a positive reputation may help to entice stakeholder groups such as suppliers and shareholders to provide resources to the company. However, the value of such intangible assets, which may be the cause of the gap between factual earnings as reported in the financial statements and the market valuations of companies, may not be captured appropriately in the financial statements due to the insufficiency of financial reporting standards (Riel et al. 2007). Fombrun (1996) refers to a public company's intangibles as the company's reputational capital. He attempts to quantify this reputational capital, the hidden economic value of the company's social, intellectual and institutional assets; by deducting the company's book value (assets less liabilities) from the company's market value (number of shares issued multiplied by the share price). However, lack of a theoretical cause and effect explanation makes it difficult to establish whether a good corporate reputation leads to improved financial performance or vice versa (Sabate and Puente 2003).

From a marketing perspective, reputation is defined as an aggregation of actions, performances or consumers' images in regard to a brand (Ranft et al. 2006). It can be considered as the outcome from a continuous process of credibility transactions. This definition, in essence, equates reputation to branding. Therefore, this definition from a marketing perspective implies that reputation can be used to generate value. Companies with good corporate reputations can therefore use their corporate names as an umbrella brand for their products and services in order to enter new markets or to introduce new products and services (Dowling 2006). The effect from using the corporate name to signal the corporate reputation has also been termed as an informative signal (Sabate et al. 2003). It should be noted, however, that branding does not necessarily mean that a particular product is superior. Rather, a strong and unique association or favourable idea is embedded in the memory of potential customers which then allows the individual or company to charge more for the product or service (Ranft et al. 2006).

2.3.3 The link between corporate reputation and personal reputation

Both personal reputation and corporate reputation, share certain common themes. First, reputation takes time to build. As Murray et al. (2005) put it, reputation building is about

sustainability. Alsop (2004) points out that reputation, be it individual or corporate, is developed based on people's perceptions over time. Second, the impact that reputation has on that individual or company can be long term and lasting (Ranft et al. 2006). However, Alsop (2004) contends that reputation takes years to develop but can be destroyed in an instant, using Enron Corporation as an example. Third, reputation can be managed and manipulated through the use of the media and other impression management techniques (Ranft et al. 2006). Alsop (2004) states that many people only source of information about a company is the media. This gives the media a lot of influence over the building of reputations. In this regard, the practice of public relations plays a role in ensuring that companies get credit for all the good that they have done by ensuring that the good news are communicated to stakeholders and to the public in general (Murray et al. 2005). These themes in regard to reputation are the same under both the management perspective and the marketing perspective (Ranft et al. 2006). However, while the media may play a role in influencing the perception of the general public, it can be argued that shareholders and the labour market would access more objective information such as audited annual reports in forming their own perceptions.

Boards of directors may sometimes decide to update their companies' image in the marketplace through the CEO they recruit. It has been acknowledged that boards of directors do assist CEOs in the management of reputation (Murray et al. 2005). One way of doing this is to recruit a CEO with a strong reputation (Ranft et al. 2006). They give an example of an individual who was hired to be a CEO of a company in the ice cream industry that wanted to expand overseas because of his reputation as an effective international growth strategist even though he had no experience in the food industry. Many dot.com companies hired professional individuals who graduated from elite universities to become CEOs for the purpose of lending legitimacy to new business ideas. An example was the CEO of eBay who had a Master of Business Administration (MBA) degree from Harvard University and was successful in her previous working experience. In addition, her past successes were promoted and perpetuated by the media. Increased publicity of a CEO and his or her past successes leads to a congruent increase in the celebrity of that CEO as well as the corporate reputation of that CEO's company. And, increasing the celebrity of a CEO enhances that CEO's reputation as well (Ranft et al. 2006).

CEOs with strong reputations are expected to yield better performance from the company (Ranft et al. 2006). While this implies that the company's reputation would be enhanced too,

the effect on the company's financial performance is less clear. Although the indication is that there is usually an immediate rise in the company share price when the appointment of a new celebrity CEO is announced, there is no compelling empirical evidence that indicates that companies managed by celebrity CEOs outperform companies managed by lower-paid CEOs in the long run (Ranft et al. 2006).

Gaines-Ross' (2003) analysis of Fortune magazine's 'Most Admired Companies' surveys leads him to conjecture that the reputation of a company's CEO is inextricably intertwined with that company's success. He bases his conjecture on the following factors:

- Fortune's rankings implied that there was a direct and unalterable relation between the perceived quality of a company's management and that company's success. Furthermore, Fortune did take into consideration management's reputation in its rankings of companies;
- the visages of CEOs, rather than companies' logos, were usually featured on the Fortune magazine's covers. This led him to question why the editors would focus on the individuals unless they intuitively believed that these individuals played a significant role in their companies' well-being;
- Fortune's analysis of why companies' rankings changed typically focussed on what CEOs did or did not do; and
- there seemed to be an increasing focus on how individuals managed to turn around or led their companies to great success.

A study by Murray et al. (2005) also find that CEO's personal reputations are closely linked to the companies' reputations, and that the media seemed to hold CEOs accountable for their companies' performances. Alsop (2004) argues that a company's reputation is affected by its CEO's reputation too. Although it appears obvious that a CEO's reputation is intertwined with the company's success or failure, there seems to be a dearth of literature on the subject of corporate reputation or branding that focussed on CEO reputation (Gaines-Ross 2003) and on the influence of reputation on corporate performance (Ranft et al. 2006). Research by Burson-Marsteller (2001), as cited by Gaines-Ross (2003), indicates that particular groups of stakeholders were of the view that CEO reputation constituted more than 40 percent of the company's reputation. The following table shows the groups of stakeholders that were

surveyed and the percentage of a company's reputation that these stakeholders attributed to the reputation of the CEO.

Table 2.1 Percentage of a company's reputation that was attributed by groups of stakeholders to the reputation of the CEO (Burson-Marsteller 2001 as cited in Gaines-Ross 2003)

Stakeholder group	Percentage of corporate reputation attributed to CEO reputation
Other CEOs	49
Executives other than CEO	47
Financial analysts	43
Media	52
Government officials	52
Total	48

A CEO's reputation is built not just on financial performance but also on qualities such as honesty and credibility (Gaines-Ross 2003), and having a track record of achievements such as the experience in leading a large and complex business as well as behaving with integrity which includes making effective, rather than politically expedient, decisions (Wackerle 2001). In fact, Wackerle (2001) is of the opinion that behaviour is more important than a good track record.

A CEO's reputation can be an asset to the company as well as to the individual who is the CEO. Gaines-Ross (2003) holds the view that CEO reputation is significant enough to warrant being identified as a separate class of intangible asset rather than just be categorised under other intangible asset class such as customer relationship or brand.

While Gaines-Ross (2003) recognises the danger in a company's fortunes being too closely tied to the CEO, he argues that this can be overcome via measures such as building value-driven corporate cultures and having a succession plan in place. Such measures may then impart value to these companies which can last beyond the tenure of their CEOs.

According to Gaines-Ross (2003), there are potential benefits to a company from having a favourable CEO reputation. Decision makers may be more likely to do the following if the company and the CEO have good reputation:

- purchase or recommend the purchase of that company's shares. It is also easier for the company to attract new sources of financial capital (Alsop 2004; Riel et al. 2007);
- give the CEO the benefit of the doubt when the company is facing a crisis (Alsop 2004);
- view that company as a good merger partner;
- pay a premium for that company's products or services (Riel et al. 2007);
- recommend that company as a good place to work in. Riel et al. (2007) comments that the research literature indicates that it is easier for companies with a good reputation to attract and retain employees; and
- provide greater media attention to that company.

The drivers of corporate reputation are not too different from those for personal reputation. The quality of products and services, workplace environment, vision and leadership, financial performance, social responsibility and the emotional bond between a company and its stakeholders are all building blocks of corporate reputation (Alsop 2004; Riel et al. 2007). Companies also need to be model citizens and not engage in unethical conduct (Alsop 2004). Threats to corporate reputation can come from allegations and litigation in regard to the quality of a company's products or its corporate conduct, disasters which disrupt operations as well as adverse criticism of the company's products and or services from the media or through the internet.

2.3.4 Professional reputation as a sub-set of personal reputation of CEOs

Kaplan, Kelbanov and Sorensen (2008), as cited by the Productivity Commission (2009), aptly summarises and classifies the characteristics and abilities that a much sought-after CEO is likely to possess on the basis of leadership, motivational and interpersonal skills, as well as personal and intellectual abilities. Desirable leadership qualities include the ability of a CEO to be effective and productive in a short period of time as well as adapt rapidly to changing conditions or priorities. Companies are also likely to seek CEOs who have motivational skills such as her or his work ethic, enthusiasm and initiative; as well as interpersonal skills such as

communication skills and openness to ideas and criticisms. Personal abilities that a CEO should possess include organisational and planning skills, and integrity. Intellectual abilities include brainpower, creativity, attention to detail and analytical skills.

These broad and usually subjective characteristics and abilities underlie a CEO's personal reputation. However, it is not feasible to directly measure these multiple characteristics and abilities and synthesize them into an algorithm that can measure the CEO's personal reputation. As a way forward, the selection of a more objectively measurable sub-set of these characteristics is considered in this study. Such a sub-set can focus on measuring the concept of CEO's professional reputation. It is contended in this thesis that proxy measures for the key characteristics associated with the professional background of the CEO can provide the basis for estimating the CEO's professional reputation.

The use of proxies is an acceptable practice in research for psychological constructs such as perceptions (like reputation) that are difficult to measure (Carpenter, Geletkanycz and Sanders 2004). For example, the management literature indicates that observable managerial characteristics are reasonable and efficient proxies for cognitions and perceptions of stakeholders about management. Such managerial characteristics include education, socioeconomic roots, tenure with the company, and other career experiences (Carpenter et al. 2004).

Neville, Bell and Menguc (2005), citing Fombrun (1996), state that an organisation will have different sub-reputations for different aspects of its activities, such as for its profitability and or the quality of its products or services. That is, reputation comprises of a number of dimensions or attributes (Othman, Darus and Arshad 2011). Therefore, reputation cannot be formed based on performance alone (Caruana 1997) but on other attributes such as management quality (Fryxell and Wang 1994). According to Weigelt et al. (1988), corporate reputation comprises of a set of economic and non-economic attributes that can be ascribed to a company, inferred from the company's past actions. Reputation may also comprise of social-psychological constructs (Emler 1990; Bonaiuto, Caddeo, Carrus, De Dominicis, Maroni and Bonnes 2012). Observers will then form an overall impression (Hutton, Goodman, Alexander and Genest 2001) based on those sub-reputations. Different observers will have different perceptions of the attributes that make up the overall reputation of a company or a CEO. For example, fund managers and stock brokers would place more

emphasis on the financial performance of a company (Caruana 1997) whereas the consumer public would place more emphasis on consistent high quality products (Yoon, Guffey and Kijewski 1993).

This applies to CEO personal reputation too. As mentioned, identifying empirical proxies for CEO reputation is not easy because a CEO's reputation is multidimensional, encompassing attributes such as charisma, credibility, perceived competence at the task, vision, integrity and honesty that are difficult to quantify (Francis et al. 2008). According to Francis et al. (2008), besides themselves, only Milbourn (2003) and Rajgopal, Shevlin and Zamora (2006) have attempted to quantify CEO reputation through the use of empirical proxies. To be more precise, however, Rajgopal et al. (2006) attempt to empirically measure CEO talent, not CEO reputation, based on a CEO's visibility in the financial press and the CEO's company past industry-adjusted return on assets (ROA).

Milbourn (2003) adopts the following proxies for CEO personal reputation:

- the CEO's tenure;
- the number of business-related articles which contained the CEO's name;
- whether the CEO was recruited externally; and
- industry-adjusted company performance during the CEO's tenure

For this study, media coverage is not selected as a proxy for CEO reputation due to media bias (refer section 2.3.1 above). In regard to the proxy relating to external recruitment, Francis et al. (2008) concur with Milbourn (2003) that outside appointments are associated with higher reputation because the hurdle for an outsider to be hired as a CEO is greater than for an insider since the insider has the advantage of possessing company-specific knowledge. However, this proxy is not taken by Francis et al. (2008) because the number of cases where this occurs relative to the number of CEOs already in place is likely to be very low. This is the situation in this study too. However, this proxy is implicitly factored into one of the proxies used in this study pertaining to CEO prior work experience. As for the last proxy mentioned above in regard to industry-adjusted company performance, using the CEO's past operating performance record may be a problem because operating performance and earnings quality are likely to be endogenous (Francis et al. 2008). According to them, companies with poor earnings quality have a greater incentive to recruit more reputable CEOs compared to

companies with good earnings quality. Francis et al. (2008) ponder CEO reputation as a function of CEO attributes such as tenure, prior position, media coverage and age. However, they disregard age as a proxy for CEO reputation because older CEOs do not necessarily have better or worse reputations than younger CEOs.

2.3.5 The measurement of CEO professional reputation

For this study, the following four proxies of CEO professional reputation are adopted based on the existing literature, face validity (refer section 4.4) and the fact that they can be measured objectively based on data from annual reports:

- CEO tenure;
- CEO level of education;
- CEO professional memberships; and
- CEO prior working experience.

Based on the definition of CEO personal reputation as discussed in section 2.3.1 above, it can be seen that the four proxies listed above would not cover all aspects of CEO personal reputation especially the aspect that links to celebrity status. Rather these four proxies focus on an important subset of CEO personal reputation, referred to in this study as CEO professional reputation. They would make up essentially information that a candidate would be expected to provide in her or his resume when applying for a job as CEO. This information would provide the foundation of facts made publicly available in company annual reports to enable outsiders to form an initial opinion about that person's professional reputation based on that person's past professional and career achievements and experiences. Such achievements and experiences would be an indicator of that individual's connections in professional and business circles and how his or her personal attributes, ethics and world view have been shaped.

These four proxy measures of professional reputation are discussed, in turn, as follows:

(a) Experience as CEO of the company: tenure

Wackerle (2001) indicates that directors who have served their companies for a long time tended to know their companies well. Simsek (2007) points out that CEOs job tenure does

have an effect on corporate performance and that CEOs build up considerable human capital throughout their tenure. Reputed CEOs have longer tenure with their companies because the board of directors are more likely to retain good executives (Francis et al. 2008). Monem (2008) uses CEO tenure as a proxy measure for CEO quality. Accordingly, the period of time that a CEO spends with her or his company, or job tenure, would be an appropriate proxy for the CEO's professional reputation in terms of the level of career-based experiences. Research by Burson-Marsteller (2001), as cited by Gaines-Ross (2003), provides evidence that there is an expectation within the business community for CEOs to attain specific business goals within certain time frames. A new CEO is expected to produce a strategic vision, garner employees support, install her or his team of executives, and turned around and reinvented the way the company does business within a few years. Regardless how otherwise talented a CEO may be, he or she cannot manage a company alone. Therefore, it is crucial to build a team that the CEO can work with (Gaines-Ross 2003). In addition, the new CEO is expected to have increased the share price of the company and to have earned credibility with the financial community. According to Gaines-Ross (2003), reputation is usually either enhanced or undermined within a few years. Therefore, CEOs need to be able to prove themselves within this limited time frame. Otherwise, they may lose their credibility and have their tenure terminated. Examples of CEOs who did not last more than a few years in their roles included the former CEOs of Kmart Corporation and Procter & Gamble (Gaines-Ross 2003). The relatively short tenure of CEOs in today's environment is recognised by Wackerle (2001) too.

(b) CEO education level

According to Milgrom (1981), different economic agents have access to different levels of information. This, therefore, leads to different patterns of behaviour to attempt to cope with such information asymmetries. For example, obtaining higher education is an attempt by workers to signal their talents to employers (Spence 1973). Morris (1987) contends that signalling and agency theories are not competing theories as implied by the accounting literature but rather, that they are actually, to an extent, consistent theories. There is strong evidence to suggest that managers have a greater chance of being appointed to the board of directors if they have elite educational and social credentials such as a bachelor's degree or a Master of Business Administration (MBA) postgraduate degree from an elite university or membership to a prestigious social club (Useem and Karabel 1986). According to Anastasi

(1988), intelligence, or IQ, is both a reflection of previous educational achievements as well as a predictor of subsequent educational performance. This is supported by Graham and Harvey (2001) who find that management who have a master of business administration (MBA) degree tend to use more sophisticated valuation techniques compared to those without an MBA degree. Moreover, Chevalier and Ellison (1999) find that managers who attended better schools earn higher rates of return. Gaines-Ross (2003) argues that business school graduates have a good knowledge of the needs of business and even if they lack experience would not be too commercially naive. Besides, CEO's level of education has been used as a proxy measure for CEO quality (Monem 2008). Therefore, based on the literature, CEOs level of education is used as another proxy for CEO professional reputation. Francis et al. (2008) also consider CEO education as a proxy for CEO reputation. However, because data in regard to CEO education were incomplete or unavailable, they decided not to use this as a proxy for CEO reputation. However, this does not apply here in Australia where section 300(10) of the Corporations Act 2001 requires that information about each director's qualifications and experience, including those of the managing director or CEO, be disclosed in the annual directors' report. The legislation, however, does not specify how detailed that information should be for example, whether the number of years worked need to be disclosed or a summary of the type of prior working experience would suffice. This proxy would capture mainly CEO's intellectual ability and motivational skills.

(c) CEO professional memberships

Chalmers and Godfrey (2004) studied reputation costs as a driving force for voluntary reporting on derivative financial instruments. They use professional affiliations with the Australian Society of Corporate Treasurers (ASCT) and the Group of 100 (G100) as proxies for managers' and their respective firms' reputation. And, Useem et al. (1986) find evidence which suggests that managers have a greater chance of being appointed to the board of directors if they have membership to a prestigious social club. Westphal and Stern (2006) have similar findings although they also find that managers who engage in a high level of interpersonal influence, or ingratiating, behaviour increase their chances of being promoted. Wackerle (2001) states that a psychologically healthy CEO would be involved in numerous activities such as sitting on the boards of other organisations and being involved in charity work to stay balanced and productive. Therefore, the literature appears to suggest that CEOs professional and social memberships can be one of the proxies for CEO professional

reputation. This proxy would capture elements of high level business and social connections and acceptance.

(d) CEO prior work experience

Huse (2005) states that measures of the board's competency include the directors' knowledge and skills as well as their intellectual, social and relational capabilities. In regard to non-executive directors, Roberts, McNulty and Stiles (2005) believe that the balance of knowledge, skills and experience on the board is an essential factor to consider in ensuring that the right people are appointed as non-executive directors. All these knowledge, skills, experience and social networks are accumulated over the years and help to build up the CEO's professional reputation. Management's past history and prior record are used to infer some personal trait such as credibility (Fama 1980; Francis et al. 2008). It is argued that outside directors who gain a reputation as skilful monitors may acquire directorships with other companies (Yermack 2004). Furthermore, Westphal et al. (2006) argue that managers who have extensive prior experience in top management are more likely to be appointed to board positions. Francis et al. (2008) contend that the hurdle for an outsider to be appointed as the CEO is higher than that for an existing employee of the company because the insider has the advantage of possessing company-specific knowledge. This suggests that an outsider CEO has a higher reputation. Therefore, CEO's prior working experience in top management is adopted as one of the proxies for CEO professional reputation.

2.4 Corporate governance

A foremost role of corporate governance mechanisms is to monitor management, especially the CEO, who is appointed as an agent for the shareholders. The nature and effectiveness of corporate governance will be central to the company fabric underpinning the evaluation and determination of the CEO's remuneration. While the structures and mechanisms of corporate governance would espouse the independent monitoring of management, especially the CEO, by the board on behalf of the shareholders, this is not necessarily the reality.

According to Wackerle (2001), boards of directors are more involved in corporate governance and the appointment of CEOs than in the past due to legal concerns, the diversity

of the boards' composition, and tenure of directors tends to exceed that of the CEO. However, he contends that despite this greater governance involvement by boards regarding the CEO, the tradition of boards of directors being cronies of their CEOs still lingers. Boards of directors have been portrayed as 'rubber stamps' for management although Kiel, Nicholson and Barclay (2005) admit that increasing market, legal and societal pressures on directors are making this less likely. Wackerle (2001) believes that the reasons for this cronyism are that the directors may have strong social relationships with the CEOs and may feel obligated not to challenge the CEOs since they were the ones who appointed the CEO. Furthermore, directors may be beholden to their CEOs because of donations made to their favourite charities and the lucrative directors' fees that they receive. Directors can always use the business judgement rule as long as they can prove that they acted in good faith to protect themselves from lawsuits on the basis that they had made mistakes rather than that they had been negligent or fraudulent. In addition, these directors may not have expended a lot of effort to ensure that they made the right selection or because they do not have a thorough knowledge of their companies.

Hence, a broad review of the development of the phenomenon of corporate governance and theoretical perspectives is first presented in this section, before a more specific review is given of the mechanisms relevant to the monitoring of the CEO and determination of CEO remuneration.

2.4.1 Corporate governance definitions and reforms

Corporate governance, according to Cadbury (1992, p. 15) is "the system by which companies are directed and controlled." This is arguably the most direct and shortest definition of corporate governance. Subsequently, the OECD (2004, p. 11), of which Australia is a member country, defined corporate governance as follows:

(It) involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are needed.

Clarke (2007) considers this OECD definition to be complete in that it refers not only to corporate governance structures and objectives but also to the context and relationships involved. The OECD believes that effective corporate governance should provide appropriate incentives to the board and management to ensure that they pursue objectives which are beneficial to the company and its shareholders as well as make effective monitoring easier. Good corporate governance assists in providing a degree of confidence which is required for a market economy to function properly. The consequence of this is a lower cost of capital and the encouragement of more efficient utilisation of resources by companies which in turn enhances growth (Clarke 2007). From a similar economic rationalism perspective, Shleifer and Vishny (1997) define corporate governance as a set of mechanisms, both market-based and institutional, which induce the self-interested controllers of the company to make decisions regarding how the company would be operated which would maximise the value of the company to its owners, being the suppliers of its capital.

Cadbury (2000) is of the opinion that corporate governance helps to hold the balance between individual and communal goals, and social and economic goals. The corporate governance framework is supposed to facilitate the use of resources in an efficient manner as well as accountability in regard to the stewardship of those resources. The purpose is to align the interests of individuals, companies and society as nearly as possible (Cadbury 2000). Similarly, the OECD (2004) acknowledges that a company's reputation and long-term success may be dependent on business ethics, as well as corporate awareness of the societal and environmental interests of the communities which are affected by the company's operations.

The Australian Securities Exchange (ASX) (2003, p. 3) defines corporate governance as 'the system by which companies are directed and managed'. It further states that corporate governance has an influence on the determination and achievement of a company's objectives, the monitoring and assessment of risk, as well as the optimisation of the company's performance. Good corporate governance structures, according to the ASX, facilitate the creation of value in companies through innovation, research and development, and entrepreneurship. In addition, the control systems and accountability provided should be commensurable with the risks involved.

Given this definition, the board of directors, the audit committee and the remuneration committee could be considered as part of the corporate governance structure. Good corporate governance practices are, according to the ASX (2003), important to Australia because this may influence the cost of capital in a global capital market. It further adds that Australian companies should be equipped to compete, as well as promote and maintain investor confidence on a global basis. Although the ASX (2003) acknowledges that there may be more than one good model of corporate governance, and that corporate governance may evolve with changes to a company's circumstances and developments both in Australia and elsewhere, it asserts that there are core principles that underlie good corporate governance. It recommends ten broad principles for listed companies to practise. ASX good corporate principles 1 and 9 have relevance to the board's management and remuneration of the CEO. Principle 1 states that the company requires a solid foundation for oversight and management by setting the respective roles and responsibilities of the board and management. Principle 9 states that the company is to ensure that the composition and level of remuneration is commensurate fairly with individual and corporate performance, and that this relationship is clearly defined.

The Productivity Commission (2009), which took into consideration the ASX definition, emphasises that safeguarding the interests of the company and its shareholders is the primary objective of corporate governance. It refers to corporate governance as the set of practices and institutions which are designed to ensure that directors and managers act in the interests of the company and ultimately, those of its shareholders.

An issue is whether good corporate governance practices will only be a product of government regulations and ASX guidelines. The Productivity Commission (2009) asserts that companies have inherent incentives to adopt good corporate governance practices so as to attract capital from investors, and that executives have incentives to deliver good performance in order to maintain their professional reputations. However, they also concede that rules can be put in place to reinforce those incentives and hence reduce the risk of a loss of confidence in the market as a result of the misleading or fraudulent behaviour of executives. A balanced view is taken by the OECD (2004) by recognising that the corporate governance framework is influenced by the regulatory, legal and institutional environment. In Australia, regulation of corporate governance is a combination of legal regulation and self-regulation (Lipton and Herzberg 2008).

What appears to be a common theme regardless of the type of corporate governance is that corporate governance crisis and reform respond to the business cycle and are therefore cyclical in nature (Clarke 2007). The reform of corporate governance and re-examination of the viability of regulatory systems tend to occur during periods of recession and corporate failures. For example, the corporate scandals at Enron and WorldCom served to speed up the passage of the Sarbanes-Oxley Act in the USA. However, this active interest in corporate governance decreases when extended periods of economic expansion recur and companies and shareholders again become more preoccupied with increasing wealth (Clarke 2007). In the USA, incidents of company management abusing their power to circumvent shareholders' interests and awarding themselves massive wage increases and various other extravagant perks such as company planes led to investors' need for boards to monitor management (Huse 2005). Huse (2005) observes that initially, control of such management misbehaviour and opportunism was left to the markets via the threat of corporate takeovers. It was believed that a poorly-run company would be susceptible to takeover by another company and this threat would thus inhibit management misbehaviour. However, in the 1980s, this market-based control was circumvented through various anti-takeover defences such as 'poison pills' (Davis 1991; Monks and Minow 2004). This initiated the first wave of shareholder activism which was led by large USA long term institutional investors who wanted sufficiently independent boards that could prevent managerial hegemony (Fama and Jensen 1983b; Jensen et al. 1976). During this period, the focus of corporate governance was on how shareholders could control management's malpractices. This led to suggestions that the roles of the CEO and chairperson of the board be separated, and that there be a majority of independent directors on the board and board committees to reduce any undue influences from directors who may have a close relationship with the CEO.

With the rapid development in information technology, globalisation and the new economy, the disappearance of geographical boundaries and the listing of large companies on stock exchanges around the world, corporate ownership became more globalised and attention shifted from dividend payouts to quarterly earnings and market prices. Investors became increasingly faceless and impatient (Huse 2005). Shareholders, their portfolio managers and stock exchanges then advocated corporate governance reforms based on agency theory and financial markets. This led to calls for increased transparency and managerial incentives to be aligned with shareholders' interests. Management in turn became, through shares and or share

options, residual claimants to these companies. However, subsequent corporate scandals in large companies such as Enron and WorldCom highlighted the importance of considering stakeholders other than shareholders. Stakeholders such as suppliers, customers, employees and local societies suffered losses because of management who were motivated by the possibility of increasing their personal wealth by manipulating dramatic increases in the market prices of their company shares (Kochan 2003). The crises also illustrated the negative consequences of global faceless investors (Child and Rodriguez 2003). This led to calls for a broader corporate governance perspective and for companies to show corporate and social responsibility (CSR) (Huse 2005).

However, active voluntary self-regulation, especially during times of economic expansion, is required so as to avoid mandatory over-regulation which may be too restrictive. Clarke (2007) contends that there can never be a corporate governance system which is perfect. This is due to the competitive and volatile nature of market systems and the fact that this will be reflected in the dynamic nature of corporate governance systems. However, corporate governance is essentially about risk management and therefore the continuous improvement of disclosure standards will enhance the effectiveness of corporate governance. In addition, corporate governance will continue to be of interest to the public since an increasing proportion of the public's wealth is being invested in companies and hence the public will want assurance that those companies are behaving responsibly. Therefore, the impetus to use corporate governance to enhance both corporate performance and corporate responsibility will remain. Despite the recognition that corporate governance is necessary, crises keep recurring in corporate governance, indicating that there is still a lot of room for improvement.

Two areas where there seem to be ongoing problems with corporate governance are the excessive remuneration of executives, which is the focus of this research, and earnings misstatement. Despite efforts to link CEO remuneration to company performance, CEO remuneration remained excessively high, regardless of whether the companies that they managed performed well or not (Clarke 2007).

2.4.2 The agency theory perspective on monitoring

The issue of how a diversely-owned organisation can be governed has been crucial in governance studies ever since Berle and Means (1932) recognised the separation of corporate ownership and organisational control (Fama 1980; Fama and Jensen 1983b). The dominant theory for studying corporate governance is agency theory (Roberts et al. 2005). This theory provides a rationale on how the organisation can be governed via two broad sets of controls: internal mechanisms of which the primary control is the board of directors, and external mechanisms.

Agency theory is a particular type of positive accounting theory (Deegan 2006). Jensen and Meckling (1976) define an agency relationship as a contract whereby one or more persons, referred to as the principal(s), engage another person, the agent, for the purpose of performing some service on their behalf. This involves the delegation of some decision-making authority to the agent. Deegan (2006) explains that implicit within agency theory is the assumption that the principals will assume that the agent, like any other individual, acts based on self-interest. Therefore, the principals will expect the agent (manager) to partake in self-serving activities that could have a detrimental effect on the principals' economic wealth unless there are restrictions that prevent the agent from doing otherwise.

This separation of ownership and management increases the possibility that management may act in its own interests which may be contrary to the interests of the shareholders (Lipton et al. 2008). For instance, management may seek to maximise its remuneration which may not be in the best interests of the shareholders. Hence the increasing interest in corporate governance by the investment community and the public in general to ensure that management adopt appropriate standards of corporate behaviour to act in the interests of the shareholders (Lipton et al. 2008).

Agency theory views an organisation as a nexus of contracts concerned with aligning the interests of owners and managers (Jensen et al. 1976; Fama 1980; Fama et al. 1983a, b). As a contracting theory, the agent is to be contracted to act in the best interests of the principal (Azim 2008). But in reality, managers are motivated to safeguard and enhance their own job security, prestige and personal wealth. This motive gives rise to decisions and actions that

may not be aligned with the interests of shareholders. Therefore, the implication for corporate governance in the modern corporation is that adequate monitoring mechanisms need to be put in place to protect shareholders from agency risk (Fama et al. 1983a, b).

Monitoring is, broadly speaking, a process of ongoing assessment of company performance so as to evaluate the operational efficiency of a system (Azim 2008). Fama et al. (1983a) identify monitoring as a part of the decision control process. They partition a company's decision process into initiation, ratification, implementation and monitoring. Monitoring can be described as a process of evaluating a situation, and acting upon that evaluation, to get reasonable assurance that the situation is in control (van den Berghe and Baelden 2005). This study defines monitoring as a control mechanism placed upon management by the company's stakeholders. Ideally, monitoring should work in such a way that management does not put self-interest before stakeholders, especially shareholders interest (Azim 2008).

Corporate monitoring is required due to the separation of ownership and control which is a major focus in agency theory (Jensen et al. 1976). This demand for monitoring arises because of information asymmetry as a result of agency risk. According to Adam Smith (1776) in his book *Wealth of Nations*, agency risk exists because management, being the managers of others' property, could not be expected to have the same concern as if it was their own property. The separation of ownership and control in publicly-owned companies can lead to agency conflicts between the interests of management and shareholders (Jensen et al. 1976). This conflict of interest is grounded in behavioural assumptions adopted in agency theory.

From a shareholder perspective, the demand for monitoring is due to the agency risk attaching to management and insiders. Effective monitoring can reduce managers' opportunities to pursue their own interests at the shareholders' expense (Shleifer and Vishny 1997). In general, shareholders' incentives to monitor managers should commensurate with the size of their investment and their means (Shivdasani 1993; Kaplan and Minton 1994; La Porta, Lopez-de-Silanes and Shleifer 2002; Holderness 2003). The capacity of shareholders to safeguard their own interests is influenced by the following:

- their proximity to management, where close proximity is achieved as an insider; and

- the economy of monitoring, where the larger shareholdings of substantial shareholders are more likely to offer the necessary economy of scale benefits of investing in monitoring (Azim 2008).

Agency risk can be reduced if, and when, management can be induced to act in the best interests of shareholders (Jensen et al. 1976). This conflict can be reduced by having a perfect contract, monitoring or by providing incentives to management (Denis 2001). But both perfect contracting and incentive options require monitoring. There are different kinds of internal and external monitoring mechanisms available which can be classified into three broad groupings as follow:

- market;
- internal monitoring; and
- regulatory.

Monitoring, however, is a prerequisite for the use of the first two methods. Contractually bonding management entails canvassing the possible actions and eventualities that management may take. This is not impossible but does require a high level of predictability and efficient monitoring. The provision of incentive contracts requires monitoring to evaluate the company performance of the agent and to provide incentives accordingly (Denis 2001). Therefore, effective monitoring is required for all situations to induce management to act in the interests of shareholders (Shleifer et al. 1997).

Market monitoring mechanisms may include substantial shareholders, the capital market and the managerial labour market. However, in a single country study, it is argued that the capital market and managerial labour market are common to all companies and therefore there is little scope to differentiate between these market monitoring mechanisms (Agrawal et al. 1996; Denis and McConnell 2003).

As mentioned, monitoring mechanisms can be classified as internal or external. Internal monitoring mechanisms have a direct influence on company performance due to their direct involvement in the monitoring process and provide checks and balances in company operations. External monitoring mechanisms, on the other hand, refer to the mechanisms that indirectly influence firm performance (Farinha 2003). According to the OECD (2004) as

referred by Azim (2008), a wide range of internal and external mechanisms can be deployed to solve complex agency problem in companies. Internal monitoring is primarily based on the board of directors which plays a leading role in monitoring management. The board may use different committees to fulfil this role. These board arrangements usually arise from the nexus of relational contracts among the various business participants, such as managers, shareholders and other stakeholders. They design detailed contractual arrangements to align the parties' interests to reduce monitoring costs. In contrast, external monitoring refers to monitoring by substantial shareholders, debt holders, market and regulatory systems. These mechanisms are market-based techniques designed to reinforce the internal governance structure of the firm. Both internal and external monitoring mechanisms are intended to reduce the agency problem (Azim 2008).

John and Senbet (1998) argue that the monitoring role of the board of directors is the most important component of corporate governance. Generally, shareholders elect the board of directors of the company and the board of directors in turn selects the senior or top management. Therefore, the board is the main internal corporate governance mechanism for monitoring management. Previous research have evaluated the effects of board monitoring through the use of proxy variables such as board size, the number of financially literate directors, the number of board meetings, the proportion of outsiders on the board, and separation of the role of CEO and chair of the board. It is expected that the board will provide enhanced monitoring which should be reflected in company performance (Azim 2008).

Monitoring costs are only one type of cost to the shareholders associated with agency risk. Agency risk results in the following costs:

- monitoring costs which arise due to monitoring the agent's behaviour;
- bonding costs which are the costs related to encouraging management to act in the best interests of the principal or shareholders; and
- residual loss, which is any remaining loss to the shareholders as a result of when there is a conflict between principals and agents' interests (Jensen et al. 1976).

In a modern organisation, shareholders delegate decision-making responsibility to the executives. Any potential agency 'residual' costs are then reduced by incurring 'monitoring' costs, such as having a board of directors. Boards, especially through independent non-

executive directors, can exercise decision control by monitoring performance and managerial decision-making (Roberts et al. 2005). The prevalent influence of agency assumptions can be seen in the process of governance reform relating to boards of directors and the composition of non-executive directors. Roberts et al. (2005) argue that non-executive directors have been the target of both blame and governance reform through successive rounds of governance failure. In the context of blame, agency theory posits that it is dangerous for executive and non-executive directors to have a relationship that is too close since that may imply capture and collusion.

Accordingly, governance reforms undertaken via the Financial Reporting Council and the Sarbanes-Oxley Act have been targeted at separating the roles of the CEO and the chairman, and increasing the number of independent non-executive directors on the board as well as on the audit and remuneration committees where conflict of interest is most likely. Roberts et al. (2005) argue that agency theory assumes self-interested opportunism as part of human nature and hence the need for control and monitoring. According to agency theory assumptions, the presence of independent non-executive directors and their control role can enhance the effectiveness of corporate governance mechanisms through direct monitoring and the appropriate use of rewards (such as remuneration and share options) and sanctions (such as executive dismissals). Such measures are deliberately intended to affect executives' calculation of their self-interests. However, Roberts et al. (2005) argue that, ironically, while some of these measures such as share options may be seen to constrain executives from acting out of self-interest, they may also actually encourage the very self-interested opportunism that they are supposed to align by promoting deceitful and self-defensive behaviour. For example, to sustain its ever-rising share price, Enron manipulated its earnings by concealing its debts and inflating its earnings (Clarke 2007).

The challenge posed by agency theory is to establish corporate governance mechanisms which can align the interests of agents (being the executives) with those of the principals (shareholders or owners). The definition of principals would include large institutional investors or fund managers which own shares in the company and therein lays the challenge. For example, trying to align the self-interests of executives with those of large fund managers (the institutional shareholders or owners) through share options poses a risk in terms of share price management or, to put it more accurately, manipulation because both the executives and the fund managers are really agents of share-price management (Kennedy 2000). That is,

executives may have a vested interest in increasing the share price because it then translates into greater profit from their share options whilst fund managers may have a vested interest in increasing the share price because the value of their funds will then and therefore appears to indicate that the fund managers are doing a good job in managing the funds. Bratton (2002) suggests that this coincidence of executives' and fund managers' self-interests probably played a significant part in the collapse of Enron. This indicates that the interest of the principals in relation to long term wealth generation depends a lot on the role of the non-executive directors (Roberts et al. 2005). Non-executive directors who identify their interests with the long term success of the company may be important as a check and balance on the self-interests of the executives and fund managers.

The literature (for example Fama 1980; Fama et al. 1983a, b) suggests that the presence of independent, experienced and financially literate directors on the board adds value to the monitoring process as well as induce management to act in the best interests of the shareholders. Substantial shareholders, due to their large amount of investment, have an incentive to continuously monitor management. The increase in shareholder activism has also led to shareholders disciplining executives, and demanding for greater board scrutiny as well as director independence (Roberts et al. 2005). In short, the effectiveness of the board is assumed to be a function of the directors' independence with an emphasis on the control role of the independent non-executive directors.

Agency theory (Berle et al. 1932; Jensen et al. 1976) suggests that CEO remuneration may be used as a mechanism to align management's interests with those of the shareholders and that this mechanism solves the issue of agency costs that arises due to the separation of management and ownership. Remuneration, according to Doucouliagos et al. (2007), is an important mechanism for soliciting effort, ensuring that executives act in accordance with owners' interests, and rewarding productivity.

2.4.3 Agency theory and the relationship between CEO remuneration and corporate performance

Taking an agency theory perspective, extensive research have been undertaken to study the relationship between CEO remuneration and corporate performance (Murphy 1999). CEO

remuneration can be seen as a gauge of managerial incentives while corporate performance can be viewed as a proxy of shareholders' interest and, to a certain extent, CEO's performance. Murphy (1985) finds a statistical association between executive remuneration and corporate performance as measured in terms of shareholder return and sales growth. 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. Jensen et al. (1990) include the shares and options components of remuneration into their study and find that the remuneration of CEOs of large American companies increased when shareholders' wealth increased. However, they conclude that CEO remuneration was not sensitive enough to corporate performance because the estimate was economically very small even though it was statistically significant. In general, the empirical evidence from international studies such as in the UK (Conyon, Gregg and Machin 1995), Canada (Zhou 2000), Denmark (Eriksson and Lausten 2000), Spain (Angel and Fumas 1997), and especially from the USA (Jensen et al. 1990; Aggarwal and Samwick 1999) show that there is a significant positive correlation between executive remuneration overall and corporate performance where corporate performance is partly the observable result of CEO performance (Merhebi et al. 2006). These findings support the agency theory contention as mentioned above that CEO remuneration is a solution to agency costs. However, the minor economic significance of the cash component of CEO remuneration is consistent with Bebchuk and Fried's (2003) view that CEO remuneration may pose an agency problem. Their view, which is shared by Yermack (1997), is that while managerial remuneration, such as CEO remuneration, is designed to alleviate agency costs; managerial remuneration is also part of the agency problem because managerial remuneration may be the result of managerial entrenchment or power, and can be characterised as rent-seeking behaviour.

On the other hand, initial Australian studies (Defina, Harris and Ramsay 1994; Izan, Sidhu and Taylor 1998; O'Neill and Iob 1999) in general find either a negative relationship or no significant relationship between executive remuneration and corporate performance. An exception was Matolcsy (2000) who has mixed findings in that remuneration- performance sensitivity, based on accounting measures of performance, was significantly positive in times of economic growth periods but insignificant during economic downturns. This finding suggests that economic cycles have some influence on remuneration-performance sensitivity. Where corporate performance was measured according to market-based performance

measures, the results are consistent with O'Neill et al. (1999) who find no relationship between CEO remuneration and market-based performance measures. Overall, most of the prior findings from Australian research are generally inconsistent with agency theory. The findings imply that Australian companies adopt anomalous corporate executive remuneration practices which surprise Merhebi et al. (2006) given the cultural and institutional similarities and links between Australia and the other developed countries namely the USA. A subsequent study on CEO remuneration over the period 1990 to 1999 inclusive by Merhebi et al. (2006), however, find that Australian CEOs' remuneration is positively related to corporate performance when market-based model specifications are used, which is consistent with that of research findings in other developed countries. This is in contrast to previous published literature and belief in the Australian corporate governance arena that CEO remuneration was not related to performance. In addition, they find that cash remuneration sensitivity varied according to company-specific risk. Based on their findings, Merhebi et al. (2006) conclude that there is some support for CEO remuneration as a solution to agency costs. However, if only cash remuneration is considered, then CEO remuneration may be part of the agency problem due to the lack of economic significance in respect of the remuneration-performance relationship.

Merhebi et al. (2006) also find a strong positive association between CEO remuneration and company size. Their study shows that the company size elasticity for CEO remuneration is 0.274 which implies that every 10 per cent increase in company size means a 2.74 per cent increase in CEO remuneration. Whilst acknowledging that size may be a proxy for performance, Merhebi et al. (2006) state that larger companies have the capacity to award larger remuneration packages regardless of performance. Jensen et al. (1976) theorise that the larger companies employ better performing CEOs to maximise their productivity.

The efficacy of agency theory and its related assumptions is not without criticism (Daily, Dalton and Cannella 2003; Hermalin and Weisbach 2003). Daily et al. (2003), after a review of the literature pertaining to agency theory, conclude that there is a lack of clear empirical support for an oversight and monitoring approach to governance from a shareholder value perspective. They opine that agency theory constituted a rather simplistic view of human nature because it assumes that managers are self-serving opportunists. Likewise, Hermalin et al. (2003) are of the view that there is a lack of definite empirical evidence linking structural characteristics of the board to organisational performance. Roberts et al. (2005) conjecture

that the knowledge base that has been built, both from a managerial and economic perspective, is beset by sampling and specification problems in addition to a lack of consideration of the potentially large number of intervening variables between the board and organisational-level outcomes. Therefore, this casts doubt on the efficacy of studies in regard to governance and agency theory.

2.4.4 The stewardship and resource dependency theoretical perspectives on corporate governance

In the wake of criticisms of agency theory, alternative theories of governance have emerged (Roberts et al. 2005). The notable ones are stewardship theory (Donaldson and Davis 1991) and resource dependency theory (Pfeffer and Salancik 1978).

Stewardship theory claims that the manager, rather than being an opportunist, wants to do a good job and be a good steward of the corporate assets and do not act as an agent for the shareholders (Donaldson 1990; Donaldson et al. 1991, 1994). That is, this theory rejects agency theory assumptions and instead posits that management believes that serving shareholders' interests are in its own interests too. Whilst agency theory assumes that management are opportunists which leads to a need for boards to be active in monitoring and controlling, stewardship theory posits that managers want to be good stewards and therefore views the board's roles as mentoring and collaboration and therefore boards should also be active in strategy formulation and implementation (Hillman and Dalziel 2003; Shen 2003). The board's role in collaboration and strategy participation is also elaborated upon from the perspectives of institutional theory (Judge and Zeithaml 1992) and social network theory (Alderfer 1986; Gulati and Westphal 1999). Hill's (1995) research reveals that non-executives were involved in reviewing and refining their organisations' strategic decisions and concluded that there was little evidence to show that there was divergence between management and shareholders' interests. Rather, it appears that management wanted to be perceived as good professionals managing the organisation.

It should be noted however, that although the underlying rationale or assumptions of agency theory and stewardship theories may be different, these do not always lead to contradicting corporate governance mechanisms (Roberts et al. 2005). For example, both theories support

the duality of the chairman and CEO roles albeit for different reasons. Whilst the rationale for this under agency theory is control through independence, the rationale under stewardship theory is for clarity of the roles especially in regard to the authority of the executive leadership (Roberts et al. 2005).

According to stewardship theory, superior corporate performance is linked to the existence of a majority of inside directors. These inside directors, it is contended, hold a stewardship perspective. This means that they exercise their intimate understanding of the business, their commitment and access to operating information and technical expertise for the interests of the company. Therefore, these inside directors hold an advantage over outside directors (Donaldson 1990; Donaldson et al. 1991). The theory further argues that the economic performance of a company is enhanced when authority and power is concentrated in a single executive, who is not distracted by external non executive directors (Donaldson et al. 1991). In this respect, stewardship theory challenges agency theory which argues that monitoring affects company performance.

In this thesis, agency theory assumptions about the management-shareholder conflict problem and the need to increase monitoring cost by implementing various corporate governance structures and mechanisms is taken to be the dominant perspective. However, as Azim (2008) points out, there are likely to be complex interrelations between corporate governance monitoring mechanisms and their substitution or complementary effects on key corporate performance measures that are relevant to shareholders.

Resource dependency theory, in the context of governance, concentrates on the boundary spanning the role of directors as well as the access that they provide to scarce resources (Roberts et al. 2005). This theory is used to justify the existence of an active board and was for many years a dominant approach in strategy, sociology and organisation theory (Pfeffer et al. 1978). The board, as an administrative body, is considered crucial in assisting the company acquire important resources from the environment and therefore protects the company from external threats and or reduce the company's dependency on external stakeholders (Huse 2005). Resource dependence theory has in recent years been supplemented by social network theory which considers networking, legitimacy and communication in internal relations as important board roles (Carpenter and Westphal 2001). A more internally focussed view than the resource dependent theory is the resource-based

view (Barney 1991), whereby the board member are viewed as resources not only because of their networks but also because of their competency. Board members will be assessed based on what they contribute, through their personal and professional qualifications, to sustainable competitive advantage.

History, however, suggests that the agency theory is more prevalent than stewardship theory. For example, the chief executive of Lehman Brothers received a remuneration of US\$34.4 million in the year before Lehman Brothers was declared bankrupt (Sandler et al. 2008). It was argued that the compensation scheme encouraged executives to take excessive risks since they will be rewarded with hefty bonuses if the company makes huge profits and not be penalised if the company suffers a loss. Therefore, agency theory, not stewardship theory, continues to be the dominant theoretical framework in understanding corporate governance (Clarke 2007).

Roberts et al. (2005) argue that theoretical pluralism, instead of the substitution of one dominant theory by another, is crucial to the progress of governance research. Donaldson et al. (1991) accept that the central issue is not whether stewardship theory is more valid than agency theory or vice versa, but rather that one theory may be valid for some phenomena but not for others. Even more recently, Hillman et al. (2003) have attempted to link the agency and resource dependency theories together whilst Daily et al. (2003) argue that a multi-theoretical approach to corporate governance would recognise the numerous structures and mechanisms that may reasonably improve organisational functioning.

2.4.5 Research on corporate governance mechanisms and factors that mitigate agency problems

Huse (2005) categorises the contextual factors or characteristics commonly studied in corporate governance research as follow:

- cultural, national and geographical differences;
- the industry that the company is in and its environment;
- CEO attributes, experience and tenure;
- ownership types and dispersion;
- company size; and

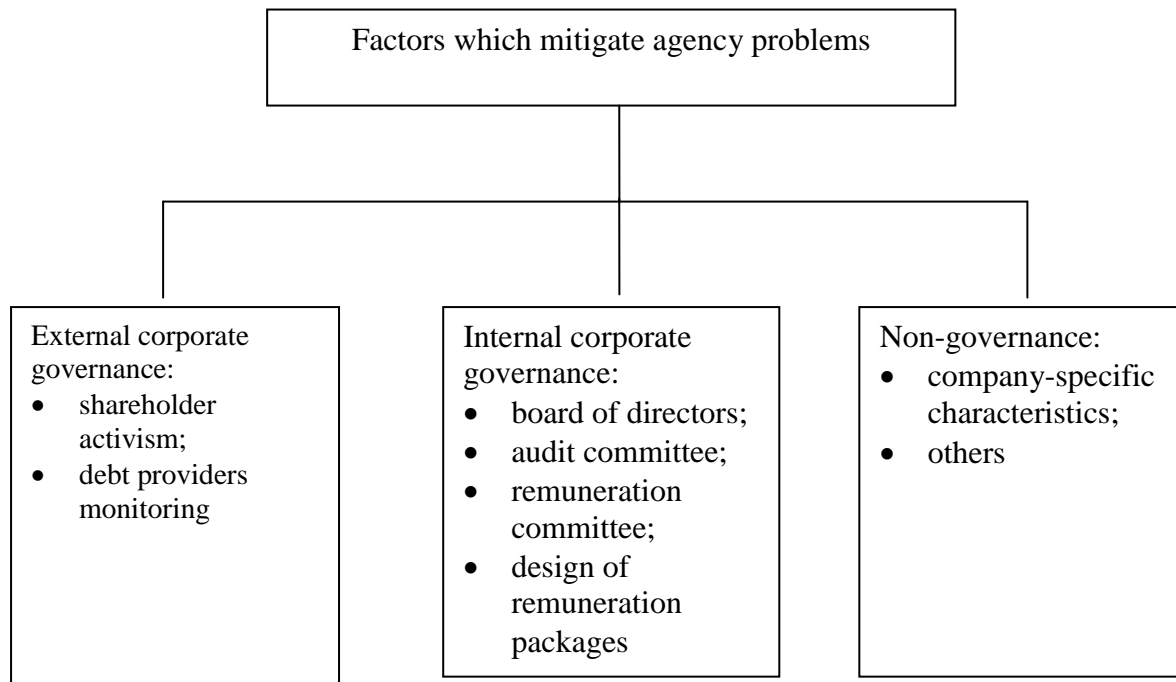
- business life-cycle variations such as configuration of the company's resources and the importance of crises.

These categories of corporate governance cover aspects of corporate governance such as:

- CEO duality, the size and composition of the board of directors (Nourayi, Kalbers and Daroca 2012);
- the number or ratio of independent non-executive directors on the remuneration committee (Cheng, Lui, Shum and Wong 2011);
- multiple directorships, independence of the chairman of the board, insider and outsider directors (Armstrong, Ittner and Larcker 2012);
- composition of the audit committee and external audit (partner) rotation (Baydoun, Maguire, Ryan and Willett 2013); and
- auditor independence (Abdel-Meguid, Ahmed and Duellman 2013) which may be affected by factors such as the provision of non-audit services (Gay and Simnett 2007).

Nelson et al. (2008) give a useful summary of factors which mitigate agency risks or problems. This is presented in Figure 2.1.

Figure 2.1: Factors that mitigate agency problems



Source: Nelson et al. (2008)

Evidence has shown that the design of executives' remuneration contracts together with certain corporate governance mechanisms including the existence of a remuneration committee and the composition of the board of directors can mitigate agency problems (Pukthuanthong, Talmor and Wallace 2004). Of particular relevance to this study, Lin (2004) states that CEO remuneration serves as a type of control mechanism which companies adopt to mitigate the agency problem.

In regard to internal governance factors in Figure 1, the question of reputation relates to the board of directors and its committees. Fama et al. (1983b) contend that outside directors who hold multiple directorships would be more motivated to monitor corporate decisions by virtue of their reputation as decision experts. Cosh and Hughes (1997) caution, however, that non-executives who hold executive positions in other companies may be conditioned by what they regard as reasonable in their role as executives. Pukthuanthong et al. (2004) argue that outside directors would be more concerned about shareholders' interest in regard to the company's remuneration structure. This is to enhance their reputation as responsible and competent directors. Other studies such as by Eng and Mak (2003) have shown that the

proportion of non-executive directors affects the transparency of annual reporting, the amount of executives' remuneration, the independence of the board of directors, and the effectiveness of corporate governance as a whole. Liu et al. (2008) contend that outside directors would want information about directors' and executives' remuneration to be made transparent to shareholders. This is for the purpose of protecting their reputation.

Turning to prior studies on various corporate governance mechanisms, these studies seek to provide empirical evidence on the issue of how to set up a suite of mechanisms so that they balance the diverse interests of the various stakeholders efficiently (Hanrahan et al. 2007). Setting up these mechanisms will impose monitoring costs on these companies. These costs will include direct costs of procedures or requirements such as the requirement to provide members with information about the company's management team or the requirement to provide independent advice to directors. Or they may be indirect costs such as the deterrence of reasonable risk-taking behaviour that could ultimately be beneficial to the company or, the diversion of management's focus and time from corporate performance to compliance matters. Therefore, the costs and benefits involved need to be weighed up when devising and implementing corporate governance mechanisms. For example, a company may have to choose between acknowledged experts in the industry in which it operates but who are not independent, and people who are independent but have no experience in that industry, when deciding on the composition of its board. In addition, another factor that needs to be taken into consideration is the law which can impose mandatory corporate governance rules (Hanrahan et al. 2007).

An important element in corporate governance is effective accountability (Cadbury 1992). Giddens (1984, p. 30) states that 'to be "accountable" for one's activities is to explicate the reasons for them and to supply the normative grounds whereby they may be justified'. According to Cadbury (1992), board accountability is related to value creation. Accountability has been equated to controls and monitoring in some cases and therefore is conceptually different from performance or being entrepreneurial (Short, Keasey, Hull and Wright 1998). This, therefore, indicates that it can become problematic when establishing accountability and performance as separate and distinct objectives within corporate governance (Roberts et al. 2005).

The corporate governance mechanisms which may influence how companies are directed and controlled so as to protect and promote stakeholders' interests include the following (Hanrahan et al. 2007):

- company directors' and officers' duties as imposed by the law which require them to act in the company's interests with reasonable care and diligence;
- the structure of the board of directors such as the separation of the positions of CEO and chairperson of the board, and the proportion of non-executive directors on the board;
- companies' disclosure of information which may be voluntary or mandatory. Such disclosure rules would include ownership and related-party transactions (Clarke 2007);
- directors' and executives' remuneration, particularly whether it is based on incentives and shareholdings;
- intervention by regulators such as the ASX and the Australian Securities and Investments Commission (ASIC) which include enforcement of compliance with the regulations (Clarke 2007);
- lawsuits by members;
- ownership concentration. Would more concentrated share ownership lead to increased monitoring of key management personnel because those shareholders, for example institutional investors, have more to lose?
- the role of reputational intermediaries (Clarke 2007). This includes auditors who attest to the fairness of the financial statements in accordance with accounting standards; and
- the market environment in which the companies operate. These include an active financial media, a culture of disclosure, stringent market transparency rules and reliable stock exchange listing standards (Clarke 2007). The labour market for executives and directors is also a corporate governance mechanism since key management personnel would be motivated to work efficiently and effectively since that may then enhance their career prospects. The capital market serves as a mechanism too in that companies which are perceived to be poorly managed may have more difficulty in raising capital and even if they manage to raise the capital, the cost may be higher. Takeovers may also work as a corporate governance mechanism since there is a risk that ineffective key management personnel may be replaced if the acquirer believes that it can manage the company better (Hanrahan et al. 2007).

In addition, company law plays a role in the internal governance of companies. In Australia, important sources of company law include the Corporations Act and Regulations, the ASIC Act and guidelines, ASX Listing Rules, accounting standards and case law (Hanrahan et al. 2007). Section 135(2) of the Corporations Act dictates that the replaceable rules, which are listed under section 141, apply to companies as those companies' internal governance rules unless they have been replaced or modified by the companies' constitutions. Companies formed after 30 June 1998 can elect to adopt the replaceable rules merely by not adopting a constitution. Prior to 1 July 1998, companies were required to adopt a memorandum as well as articles of association upon formation. However, such companies can adopt the replaceable rules by repealing of their existing memorandums and articles of association. Where public companies have adopted a constitution, a copy of that constitution can be obtained by members from their respective companies under section 139 of the Corporations Act. Alternatively, a copy can be obtained by conducting a search of ASIC's records.

2.4.6 The roles, functions and duties of 'officers' (that is, directors and executives) of the company

The ASX (2007) states that establishing the roles of the board of directors and senior executives are fundamental to any corporate governance structure. Clarke (2007) contends that the board of directors plays a pivotal role in corporate governance and is the critical nexus which determines the company's success and growth. The board of directors are responsible internally towards the company in providing guidance and leadership, and externally towards stakeholders in general of which investors, arguably, come first. According to Hanrahan et al. (2007), the board of directors is a key element in ensuring directors' accountability to the company's shareholders and company employees' accountability to the company. Accordingly, the key functions of the board may be summarised as follow (Clarke 2007; OECD 2004):

- to ensure accountability and monitor the management of the company;
- to supervise the strategic direction of the company;
- to advise the company's executives on critical aspects in regard to running the company; and

- to build institutional relationships with stakeholders including investors and the community (Zahra and Pearce 1989).

Essentially, the board's job is to direct and management's job is to manage although this separation of roles is difficult to put into practice (Clarke 2007).

The separation of the CEO's role from that of the chairman as well as the chairman being a non-executive creates a suitable environment for non-executives to be effective. In addition, Clarke (2007) and Davies (2000) argue that a balance between executive and non-executive directors on the board is a positive since it gives the non-executive directors greater exposure to the business strategy and the working of the executives while at the same time making it more difficult for executives to withhold or hide information from the board. They further argue that the separation of the supervisory and management functions in the German two-tiered boards, and the dominance of non-executives on the USA boards may hinder the ability of non-executive directors to gain sufficient knowledge about the business and have a strong involvement in strategy, both of which in turn may hinder their ability to fulfil their control role.

Although board design may differ, they share certain fundamental elements as follow (Carter and Lorsch 2004):

- board structure which includes the board size and the committees required for the board to discharge its roles;
- board composition which is the mix of necessary attributes of its members such as their skills and experience; and
- board process which refers to how the board obtains knowledge, collects information and makes decisions.

Roberts et al. (2005) argue that board structure, composition and independence condition board effectiveness. An effective board, according to Forbes and Milliken (1999), is one which is task effective, that is, able to perform distinctively and control activities successfully, and yet is cohesive enough to be able to continue working together. In addition, board members need to trust each other's judgment and expertise. Roberts et al. (2005) contend that it is the actual behaviour, namely the behavioural dynamics of the board and the interpersonal

and group relationships, of the executives vis-à-vis non-executives which determines board effectiveness in that non-executives support the executives in their leadership of the company and at the same time monitor and control the executives' conduct. They further contend that non-executive directors acting individually and collectively can be effective and create accountability within the board through a variety of behaviours in particular by discussing, questioning, exploring, probing, debating, challenging, testing and encouraging. They categorise the abovementioned behaviours into three linked sets as follow:

- independent but involved;
- engaged but non-executive; and
- challenging but supportive.

Studies have shown that even without overt interventions, the expectation of scrutiny from non-executives has had a significant disciplinary effect on executives in enhancing the standard of proposals presented to the board (Lorsch and MacIver 1989; Mace 1971). This was affirmed in a more recent research by Stiles (2001) where it is revealed that non-executives perceived that their presence in the minds of the executives helped to enhance the quality of strategic proposals to the board as well as in the effectiveness of decision-making. The extent of this effect may depend on the non-executive directors' credibility. Non-executive directors' credibility, argue Roberts et al. (2005), depends on the skills and experience, especially past or current executive experience, which they bring to the board. Cadbury (1992), however, warns of the dangers in over-emphasising the control role of non-executive directors over their strategic role since this may undermine board effectiveness. Roberts et al. (2005) point out that if executives perceive non-executive directors' contributions to be either ill-informed or inappropriate; they may become frustrated or resentful. This in turn can lead to a negative dynamic relationship which is characterised by mistrust and the withholding of information.

Not all non-executive directors may be independent (Psaros and Seamer 2002). Some non-executive directors may develop a fiduciary relationship with the company by providing business services for personal gain (Baysinger and Butler 1985). These directors are referred to as grey directors and may include management consultants, lawyers, insurance executives, as well as commercial and investment bankers. Their independence is questionable because of their potential interest in the company. An independent director can be defined as a non-

executive director who meets all the following criteria of independence (ASX 2003; Hanrahan et al. 2007):

- does not have a substantial holding of shares in the company, and is not an officer nor has any direct association with a substantial shareholder of the company;
- has not been a director of the company for a period which may, or may reasonably be perceived to, materially hinder that director's ability to act in the company's best interests;
- has not, within the last three years, been employed in an executive role by the company or any other members of the group, nor served on the board after cessation of such employment;
- has not, within the last three years, been a material consultant , principal or employee materially associated with a material professional adviser or service provider, to the company or any other group member;
- is not a material customer or supplier to the company or members of its group, nor an officer directly or indirectly linked to such material customer or supplier;
- does not have any material contractual relationship with the company or any other member of its group except as a director of the company; and
- is free from any business or other relationship as well as any interest which may, or may reasonably be perceived to, materially hinder the director from acting in the company's best interests.

According to Fama et al. (1983a), independent non-executive directors have a reputation as experts in decision control and monitoring. Independent non-executive directors are known as outside directors in the USA (Roberts et al. 2005). If a non-executive director does not meet all of the abovementioned criteria, that director may sometimes be referred to as an affiliated non-executive director (Hanrahan et al. 2007). Independence in the context of accountability, according to Roberts et al. (2005), can have different meanings. To investors who are distant from management of the company, independence is seen mainly as a protection against the risk of executives having too much influence over non-executive directors. That is, non-executive directors need to be able to retain an independence of mind. Independence, they argue, can also mean the ability of non-executive directors, given their extensive past experience elsewhere and their not being involved in the daily affairs of the company, to see

things differently and thus offer a different perspective to the board on how to govern the company.

The chairperson of directors is the person who is elected by the directors to chair the board's meetings and sign the minutes of those meetings. This person usually chairs the meetings of members as well (Hanrahan et al. 2007).

Approval of directors' remuneration may be subject to voting by members of the listed company (Hanrahan et al. 2007). For example, directors' remuneration must be approved by ordinary resolution where the replaceable rule in s 202A is applicable to the company. However, directors are free, within the constraints of their duties as directors, to determine their own remuneration without member approval if the company's internal governance rules do not state that member approval is required when determining directors' remuneration unless the following special provisions apply.

S 300A of the Corporations Act imposes a requirement on directors of listed companies to prepare a remuneration report (Hanrahan et al. 2007). This report should detail the company's remuneration policy and practices for directors, company secretaries and senior managers. Furthermore, s 250R requires that a resolution must be put to the listed company's AGM that the remuneration report be adopted. The vote on the resolution, however, is not binding as stated under s 250R (3). The resolution is meant to be advisory only.

In practice, the approval of the remuneration arrangement for the CEO, as a board member, may be affected by different forces than the remuneration for other directors. According to Bebchuk et al.'s (2002) *managerial power hypothesis*, executives can influence the terms of their own remuneration packages, and can do so in a way that minimises external scrutiny and criticism because of their ability to exert their power and influence over captive directors in order to extract rent through their remuneration arrangements. This hypothesis is not without its critique. Murphy (2002) contends that the increase in CEO remuneration is more likely due to an increase in CEO bargaining power rather than due to rent extraction (which requires captive boards) although he concedes that this would be another aspect of managerial power.

The final aspect to discuss in relation to the board of directors is the type of board. There are two types, a unitary board and a staggered board (Bebchuk and Cohen 2005). In companies with a unitary board, all directors stand for election in the same year. In companies with a staggered board, directors are categorised into groups, with different groups of directors standing for election in different years. This is a key arrangement which makes it more difficult for incumbent directors to be removed by shareholders since replacing a majority of the board would require the passage of at least two annual elections (Bebchuk et al. 2005). It is argued that there are costs involved in having entrenched boards such as complacency by the incumbent directors in managing the company and, as discussed above, captive boards by the CEO due to their relationship over a long period of time.

2.4.7 Remuneration committees

2.4.7.1 Monitoring role of the remuneration committee within the board structure

The influence of agency theory on corporate governance research can be observed in the predominance of studies that examine board composition and structure. In general, previous research suggests that board size (Jensen 1993), a higher percentage of outsiders (Pfeffer 1972), and different people holding the CEO and chair of boards positions (Coles, McWilliams and Sen 2001) have an effect in the monitoring of management so as to reduce agency cost. Various studies argue that there are particular characteristics that are necessary for the board of directors to be able to monitor management effectively. Jensen (1993) looks at three characteristics of the board when evaluating the monitoring ability of the board. These are board composition, board leadership structure and board size. In Australia, the ASX recommends the establishment of a remuneration committee (recommendation 9.2).

It has been argued that board committees help improve the efficiency of board monitoring by allowing a closer look at management activities and decision making. This is particularly true where the board size is large since it then becomes extremely difficult for to have a constructive discussion on all matters and arrive to a consensus decision (Menon and Williams 1994). Accordingly, boards split their functions into different categories and set up appropriate committees such as the remuneration committee to focus on specific functions.

The effectiveness of the board's sub-committees, as with the full board of directors, may be influenced by similar factors such as their composition in terms of the independence of the members, and separation of the roles of CEO and Chair of the committees (Azim 2008).

This research focuses on the role of a committee of the board that is the remuneration committee. Remuneration committees are responsible for determining and reviewing the remuneration packages of senior management (Klein 1998). Such committees have become more common following the release of the Cadbury Report (1992). According to Bosch (1995), it is important to consider the company's needs together with the interests of its shareholders and other stakeholders when designing remuneration packages. Remuneration committees play a role in the monitoring process by providing advice and support to the full board. Remuneration committees may discharge their responsibilities to shareholders in the following ways:

- they draft executives' remuneration policy;
- they determine executive directors' remuneration;
- they review and approve the remuneration of direct reports to the CEO, as well as the remuneration of other senior executives; and
- they review and approve all equity-based plans (Bosch 1995).

The existence of remuneration committees is consistent with agency theory, which advocates the separation of management from control (Barkema and Gomez-Mejia 1998). The increasing demand for greater accountability in regard to remuneration has contributed substantially to the growth in remuneration committees (Bosch 1995). The Bosch Report (1995) recommends that remuneration committees comprise wholly or mainly of non-executive directors and that such committees be chaired by a non executive director. This has also been reflected in the ASX recommendations (2003).

2.4.7.2 Remuneration committee independence

Board composition plays a crucial role in corporate governance (Helen, Cheng and Gray 2007). In regard to board composition, the greatest concern has been placed on the proportion of independent directors on the board. For example, Agrawal et al. (1996) study a range of corporate governance variables and find that board independence is the only governance

mechanism that consistently affects corporate value. The ASX Corporate Governance Council defines independent directors as those who are independent of management, and are free of any business or other relationship that could materially impair their exercise of independent judgement (ASX 2003). It has been contended that independent directors are expected to be more effective monitors because they are supposed to be independent of management and hence are able to resist any pressure from management (Azim 2008). Consequently, they are more likely to mitigate agency problems which protect shareholders' interests. In addition, independent directors can add value to companies by providing expert knowledge and monitoring services (Fama 1980; Fama et al. 1983a). However, a study by Li and Qian (2011) notes that the presence of outside directors on the remuneration committee, who are themselves CEOs of other companies, is associated with higher CEO remuneration. Bebchuk and Fried (2005) suggest that director behaviour may be subject to an agency problem since directors may have economic, psychological and or social incentives to “go along” with the CEO’s remuneration package. For example, if directors object to the remuneration package sought by the CEO, directors may hurt their chances of being nominated for re-election to the board since the CEO may have significant influence over the nomination process. At the very least, objecting will mean a very unpleasant encounter with the CEO. However, there is empirical based research that supports this contention that independent directors are more critical of management abilities and thereby are more effective monitors (Hermalin et al. 1988). In relation to board composition, agency theory suggests that having a greater proportion of independent directors can reduce agency costs through the monitoring of any self-interest motivated actions by management (Fama 1980; Fama et al. 1983a). Prior studies in general indicate that having a greater proportion of independent directors suggests more objective monitoring of management (Fama et al. 1983a; Beatty and Zajac 1994). Studies also show that non-executive directors, not just those who are independent, are relatively more effective monitors of managerial actions (Dechow et al. 1996; Beasley 1996; Klein 1998).

2.4.7.3 Remuneration committee diligence

The existence of a remuneration committee on its own does not indicate its effectiveness. There needs to be some measure of the diligence of the remuneration committee in performing its role. One such proxy measure is the frequency of remuneration committee meetings. Major decisions are usually made at a board meeting. Therefore, it is important that

directors spend time in board meetings for decision making. This holds true for committees of the board also.

The significance of meeting frequency is ambiguous. While a greater number of meetings may indicate diligence or may signal a problem or crisis that requires the board's attention, infrequent meetings decrease directors' opportunity to receive information. Therefore, the frequency of meetings should be considered together with other factors, such as the size of the board (Azim 2008).

There are two conflicting views pertaining to the significance of board meetings frequency. One view suggests that frequent board meetings are beneficial to shareholders (Vafeas 1999) since time spent at board meetings is important in improving the effectiveness of board decisions (Conger, Finegold and Lawler 1998). A widely shared perception of a major problem that directors face is lack of time to carry out their duties (Lipton and Lorsch 1992). Directors need time to deal with the complexity of the matters pertaining to their companies especially with the amount and complexity of the data that they receive. This perception is reinforced by criticisms that directors take too many outside directorships which affect their ability to attend meetings regularly and, consequently, impair their ability to monitor management (Byrne 1996).

The other view suggests that board meetings are not necessarily useful, as independent directors can have meaningful exchanges of ideas among themselves or with management outside of meetings (Vafeas 1999). It has also been argued that the CEO usually sets the agenda for board meetings (Jensen 1993), and this limits the ability of independent directors to exercise meaningful control over management (Vafeas 1999).

Research shows that there is an inverse relationship between the annual number of board meetings and corporate value (Vafeas 1999).

There are costs and benefits involved in conducting board meetings. Costs include directors' time, and directors' meeting fees and travel expenses. The benefits include more time for directors to confer, set strategy, and monitor management (Vafeas 1999). When the benefits of board meetings outweigh the costs, then it is desirable to the shareholders.

It has also been argued that the quality is more important than the quantity of time that directors spend at board meetings. The frequency of meetings is considered a crude measure of (audit) committee activity by Menon et al. (1994). They argue that meeting frequency does not provide any indication of the work accomplished during these meetings or of the committee's effectiveness in ensuring financial reporting integrity. However, the quantity of directors' time is dictated to some extent by shareholder activist groups and labour unions who measure directors' performance on factors such as attendance at meetings and the number of directorships (Azim 2008). He argues that a committee that meets once in the entire year or does not meet frequently is unlikely to be an effective monitor. According to Lipton et al. (1992), the frequency and duration of meetings is important because directors need sufficient time to properly carry out their duties effectively. Meeting frequently gives the board the opportunity, but not the guarantee, to spend more time in monitoring the activities of management and this therefore substantially increases boards' monitoring ability. The number of meetings of committees has been used to capture the time spent by the directors who monitor the company through a committee system such as the audit committee (Bull and Sharp 1989; DeZoort 1997) or the remuneration committee (Barkema et al. 1998). Accordingly, the frequency of board meetings is an important factor when assessing the effectiveness of the board as a monitoring mechanism. Information in regard to the duration of meetings is not required to be disclosed in the annual reports under Australian law. Accordingly, this information is not readily available and cannot be used for this research.

2.4.7.4 Background and experience of members of the remuneration committee

It has been argued that the educational background and experience of directors have an impact on their monitoring ability (Azim 2008). According to Agrawal and Chandha (2005), the financial expertise of directors reduces the likelihood of accounting fraud. Being financially literate helps directors to understand the implications of financial decisions. Financial literacy can be acquired via formal and self-learned education (Livingston 2002). Ramsay (2001) contends that financial literacy is a component of the general standards of skill, care and diligence expected of company directors. Likewise, Bull et al. (1989) and DeZoort (1997) believe that directors' educational background help them to discharge their monitoring role better. There is a general expectation that a person gains a better understanding of the financial matters of the business when a person sits on the board of a

public listed company (Azim 2008). He argues that when evaluating a director's education and background, whether that person has worked as a director in any company for over five years and or has an educational background in business should be taken into consideration. Having solid work experience and higher levels of education helps a person understand the business and be able to monitor management effectively (Azim 2008).

It can be argued that the level of financial literacy required by the remuneration committee is substantially lower than that required by the audit committee. This is because remuneration is a topic that is understandable and of major interest to anyone who has working and or business experience. Employees would obviously be interested in how they are getting paid, such as overtime loading and employee share option schemes, and how enterprise bargaining agreements apply. Likewise, management would be interested in remuneration-related matters since labour costs tend to be a major cost in any organisational operations. Contrast this with the level of financial literacy that is required for the audit committee where a sufficient grasp of accounting-related issues including accounting standards is required. Furthermore, Bender (2011) states that the remuneration committee tends to use advice from remuneration consultants to justify any decisions that are later challenged since there is usually no single right answer to most questions relating to executive remuneration. The remuneration consultant serves as an independent party to the remuneration process by providing impartial advice and this therefore confers legitimacy on the remuneration committee's decisions. This is also a form of risk management by the remuneration committee. Hence, the financial literacy of the remuneration committee members is not included as an independent variable for this study.

2.4.8 Other relevant governance factors

2.4.8.1 Board size

Board size refers to the number of directors that sit on the board of directors. It has been argued that the monitoring ability of boards is determined to some extent by board size (Rahman 2006). From an agency theory perspective, the board should become more vigilant over agency problems as its size increases simply because a greater number of people will be

reviewing management actions (Kiel and Nicholson 2003). However, the counter argument is that if the size of the board becomes too large, this may decrease its ability to effectively monitor the company (Ryan and Wiggins 2004). A large board may increase the problem of free riding in that some directors may just rely on their peers to do the monitoring and not do anything. In addition, it may become more difficult for directors to express their opinions and ideas in the limited time available (Golden and Zajac 2001) and reduces the cohesiveness of the board (Lipton et al. 1992). Eisenberg, Sundgren and Wells (1998) find that large boards are less likely to punish managers for poor performance. Their empirical results, using Finnish companies, support the notion that smaller boards enhance corporate performance. Yermack (1996) shows that USA companies with smaller boards have high market values. Conyon and Peck (1998), meanwhile, cite weak evidence of an inverse relationship between board size and market based company performance. However, Kiel and Nicholson (2003) find evidence in Australia that large boards are not necessarily impediments to good performance. They argue that there is an inverted U relationship between board size and corporate performance in which increasing the number of directors to a certain size can bring the board to an optimal experience and skills mix level. Beyond that point, the complex dynamics of having a large board prevail over the experience and skills advantage that additional directors might bring. Broadly speaking, board size may differ depending on country-specific factors such as the types and complexity of business, and regulatory requirements. And, the larger the board, the more likely the proportion of independent directors will be greater. Therefore, a larger board should lead to better monitoring. However, it is also possible that, depending on company size and operation, the proportion of independent directors may decrease as board size increases (Azim 2008). For the sample in this research, the maximum number of members in the remuneration committee is eight. Accordingly, it is envisaged that the problems associated with having a large board would not be an issue.

2.4.8.2 Substantial shareholders and their activism

Substantial shareholders, also known as blockholders, can play a role as an external corporate governance mechanism. The larger the number of shares held by an individual, the greater the incentive for that individual to invest time in monitoring activity (Azim 2008). A large shareholding creates a greater incentive for those shareholders to monitor management

(Craswell, Taylor and Saywell 1997). And, the fewer the shareholders that are required to form a majority, the less costly and easier it becomes for coordination and monitoring (Shailer 2004).

Substantial shareholders can be individuals, companies or institutional investors. Institutional investors is a broad category that encompasses mutual funds and unit trusts, pension and superannuation funds, investment companies, banks, insurance companies, and charitable foundations (Farrar 2004). There is a difference between the motivation and monitoring ability of institutional investors compared to large non-institutional investors. Although institutional investors might be imperfect monitors due to their own internal agency problems (Gorton and Kahl 1999), institutional investors still do play an active role in monitoring and disciplining managerial discretions (Koh 2003).

Substantial shareholders are more able to influence management due to their greater bargaining power over the company relative to individuals. If individual shareholders are not satisfied with the performance of a company, they rely mainly on an exit strategy, as in by disposing of their shares in the company and avoid any coordination costs of collective actions, rather than by seeking a voice in the management of the company (Chowdhury 2004). Substantial shareholders, on the other hand, exercise their influence through direct negotiation with management and proxy contest. By exercising their potential influence over management's activities, directly through their ownership and indirectly by trading their shares (Gillan and Starks 2003; Gillan 2006), substantial shareholders may be able to determine the distribution of power between management and shareholders. According to Shleifer and Vishny (1986), substantial shareholders can function as monitors to reduce the scope of managerial opportunism or shirking. An increased concentration of share ownership increases the prospect of monitoring, be it individual or co-ordinated, by substantial shareholders. Substantial shareholders through their collective action can bring pressure to bear on the monitoring process and reduce the scope of managerial opportunism, which results in a lower agency conflict between management and shareholders (Shleifer et al. 1986).

In regard to the impact of substantial shareholders on company performance, the evidence relating to this is mixed and, therefore, largely inconclusive (Azim 2008). According to Bethel, Liebeskind and Opler (1998), corporate performance is enhanced after activist

investors purchase large blocks of shares. This may be due to activist investors being more likely to purchase large blocks of shares in highly diversified companies with poor profitability. They also note that purchases of shares by activist investors tends to be followed by abnormal share price appreciations, increases in assets divestitures, and decreases in mergers and acquisitions.

Holderness (2003) provides evidence of both positive and negative impact of substantial shareholders on managerial actions and corporate performance. There is some evidence that block ownership has a positive effect on company actions. This may be because substantial shareholders' investment has reached a level whereby managers are forced to consider shareholder value (Brown 1998). Countering any action by substantial shareholders can become difficult and costly for the management. However, while substantial shareholders have an incentive to monitor management, they might also consume company resources (Holderness 2003).

Major shareholders often hold positions on company boards which provide them with power beyond that attached to a voting share. Prior research has identified links between share ownership and board representation (Mizruchi 1982). For example, Holderness and Sheehan (1988) find that majority shareholders are often directly involved in the management of the respective companies. On occasions, representatives of large institutions have lobbied for seats on the board (Fromson 1990). The presence of an external substantial shareholder on the board of directors raises the possibility of a change in the monitoring process.

A related branch of the literature is on substantial shareholders activism. This is generally in the form of either shareholder proposals or private negotiations with management (Azim 2008). Companies that are targeted by substantial shareholders activism tend to be large companies which have been performing poorly, relatively speaking. The purpose of targeting such companies is usually to effectively monitor and convince management to alter the company's corporate governance structure. Research has shown that institutional investors play an active role in monitoring and disciplining managerial discretion, as well as improving information efficiency in the capital market (Bushee 1998; El-Gazzar 1998). Substantial shareholders may enjoy benefits that are not available to other shareholders, known as private benefits of control; and seek to increase company value in the form of greater cash flows, (Denis et al. 2003) which is known as shared benefits of control to the extent that these are

shared with minority shareholders (Shleifer et al. 1986). Private benefits need not come at the expense of other shareholders. The shared benefits of control arise from superior management or monitoring that come with substantial shareholders. Substantial shareholders or their representatives usually serve as directors and officers, which allows them to influence management decisions directly. There is also evidence that substantial shareholdings are associated with abnormal share price increases (Mikkelson and Ruback 1985; Shleifer et al. 1986). A survey conducted by Shleifer et al. (1997) finds a negative correlation between the strength of shareholder protection and the likelihood of expatriation of shareholder funds by management. However, Solomon and Solomon (2004) argue that investors can overcome weak legal shareholder protection by being substantially large. However, like any other corporate governance mechanisms, the extent of monitoring by substantial shareholders in a company varies with the presence of other monitoring mechanisms.

2.4.9 Weaknesses in corporate governance reflected in KMP remuneration practices

The dramatic increase in CEO remuneration over the last two decades coupled with corporate governance scandals have resulted in widespread recognition of possible flaws in companies' KMP (key management personnel) remuneration practices (Bebchuk and Fried 2005). However, there are still considerable disagreements in regard to the source and scope of the problems, and on how to address them. Some are of the view that flawed KMP remuneration practices were confined to a relatively small number of companies. Those who conceded that such flawed practices were widespread took the view that those flaws were due to honest errors and lapses in judgment by the boards and that now that the problems have been recognised, boards will take action to resolve these problems. And, there are others who, while admitting that regulatory intervention was necessary, take the view that once reforms that strengthen directors' independence have been implemented, boards can be expected to adopt KMP remuneration practices which have shareholders' interests at heart. However, Bebchuk et al. (2005) contend that flawed KMP remuneration practices, which can impose significant costs on shareholders, are widespread, systemic and persistent. They believe that the problems are due to structural defects in the corporate governance structure which enable KMP to exert influence over their boards rather than due to honest mistakes and poor judgements. They argue that the principal source of defective remuneration practices is the

lack of effective arms-length dealings under the existing corporate governance system. Accordingly, corporate governance arrangements need to be changed to address those flaws.

Bebchuk et al. (2005) further contend that managerial influence over their own remuneration can lead to two types of managerial incentive problems. Firstly, existing remuneration packages are less likely to motivate management to increase shareholder value compared to what would have been provided under arm's length arrangements. Bebchuk et al. (2005) argue that the decoupling of managerial remuneration from management's contributions to company performance is more severe than it appears. Therefore, making remuneration more sensitive to company performance may bring substantial benefits to shareholders. Secondly, not only have existing remuneration practices fail to provide cost-effective incentives to increase shareholder value, they have also created perverse incentives. For example, management may be motivated to increase company size via acquisition or other means even if that approach reduces shareholder value, just because existing remuneration practices reward management for expanding the company size.

A central tenet of KMP remuneration is that directors who set KMP remuneration arrangements operate at arm's length from those KMP and are guided solely by shareholder interests. Bebchuk et al. (2005) believe otherwise and contend that the prevailing presumption, that remuneration arrangements are made at arm's length unless it can be proven otherwise, is not warranted. Their critics suggest that there are reasons why some remuneration practices may appear to be at odds but are actually within the arm's length contracting view and that Bebchuk et al. (2005) have not succeeded in completely ruling out that there is no arm's length contracting. For example, Core, Guay and Thomas (2005) contend that there are circumstances where it might actually be desirable to have large amounts of non-performance related remuneration such as when a company wishes to attract a highly qualified candidate. However, Bebchuk et al. (2005) view that remuneration practices should be set at arm's length recognises that management are subject to an agency problem and therefore management's interests may conflict with shareholder interests. As such, management need to be provided with adequate incentives so that they seek to maximise shareholder value. Hence, it is logical to assume that not only management behaviour but also director behaviour may be subject to an agency problem.

Bebchuk et al. (2005) then proceed to explain why directors may be motivated to support remuneration practices that favour management even though that may be at the expense of the shareholders. Firstly, directors receive financial as well as non-financial benefits such as salaries, prestige and business and social connections, which would obviously incentivise them to keep their positions. In a world where shareholders appoint directors, directors may wish to be seen as acting in the shareholders' interests. However, while shareholders may have the authority to appoint individual directors, the CEO may have significant influence over the nomination process which effectively gives the CEO some vetting power. Therefore, displeasing the CEO may jeopardise one's chances of being nominated for directorship. Even if the CEO has no influence over the nomination, the nominating committee, due to friendship, collegiality, a desire to avoid friction, and or other reasons, may not look favourably upon a director who takes a tough stand on the CEO's remuneration. Furthermore, CEOs have some influence over directors' remuneration. As the head of the company and usually as a board member also, CEOs can choose to encourage or discourage increases to directors' remuneration. At the very least, generous treatment of the CEO cultivates an environment which is conducive to the generous treatment of the directors too. A study by Brick, Palmon and Wald (2006) appears to support this notion, finding that companies which pay higher remuneration to their CEOs also pay higher remuneration to their directors and that such high remuneration levels appear to be attributed to insider cooperation rather than superior company performance. Although the regulations may limit to some extent the CEO's ability to reward directors, CEOs control over their companies' resources enable them to reward directors in other ways such as by donating the company's funds to charitable organisations of the directors' choice. These rewards, from the economic, social and psychological perspectives, may outweigh the small direct cost to directors from approving remuneration packages that are not in the shareholders' interest. The direct cost, according to Bebhuk et al. (2005), is small because directors usually own only a small fraction of the company's shares. Therefore, the reduction in the value of their shareholding from approving remuneration packages that are too favourable to KMP is small.

Secondly, many directors, even independent directors, may have some prior social connection to the CEO of the company. Even directors who do not know the CEO before their appointment will commence their service with a sense of loyalty and obligation towards the CEO (Bebchuk et al. 2005). Having this sense of good will towards the CEO, they will reciprocate by being generous with the CEO when contracting the CEO's remuneration

package. This kind of reciprocity is quite common in many professional and social contexts. In fact, Main, O'Reilly and Wade (1995) find that chairs of remuneration committees who were appointed after the CEO took office tend to award higher remuneration to the CEO. In addition, there is an expectation that directors treat their fellow directors collegially and the CEO is the directors' colleague. Furthermore, the CEO is the company's leader who has the most influence on the company's future direction. Accordingly, it is difficult for directors to switch hats to contract at arm's length with their colleague and leader.

Another reason that Bebchuk et al. (2005) espouse to support their view that directors are subject to an agency problem too is based on cognitive dissonance and a sense of solidarity among the directors. Members of the remuneration committee are most likely to be current and former KMP of other companies. Since people have a tendency to form views which are based on their self interest, those directors are likely to support the type of remuneration packages which they themselves have benefitted from. For example, a director who has benefitted from an option plan in his or her remuneration arrangement as a KMP with another company is more likely to reject the notion that such plans provide KMP with excessive windfalls. Furthermore, a director who has been a KMP of another company might feel some solidarity and sympathise with the company's KMP. Therefore, he or she would be inclined to treat these KMP in the same way that he or she would like to be treated. They support this argument with a finding by Main et al. (1995) that CEO remuneration is correlated with the remuneration levels of outside directors who are on the remuneration committee. In addition, there is a widespread practice by many boards of ratcheting KMP remuneration upwards by more than the industry average (Murphy 1999). Such ratcheting shows that boards prefer to go along with whatever the prevailing practices are rather than seek the best arrangement for their shareholders (Bebchuk et al. 2005).

While Murphy (2002) assumes that managerial influence does not apply where boards negotiate remuneration with a CEO candidate from outside the company, Bebchuk et al. (2005) believe that there still is managerial influence although that influence is less compared to where the CEO is an incumbent. This is because the directors know that once the candidate becomes the CEO, that person will have influence over their re-nomination to the board as well as their remuneration packages. In addition, the directors will want to cultivate a good working and personal relationship with the incoming CEO.

Jenkins (2002) suggests that the increased willingness of directors in firing CEOs in recent years indicates that boards do deal with CEOs at arm's length. However, the counter argument by Bebchuk et al. (2005) is that such firings are limited to unusual circumstances such as where the CEO is viewed by revolting shareholders as having a terrible performance record, or is accused of unethical or illegal misconduct. They contend that mere mediocrity is not sufficient for the CEO to get fired. Even where the CEO is fired, the board tends to pay out benefits beyond those required contractually in order to sweeten the CEO's departure and alleviate the directors' guilt.

In regard to the argument that market forces would force boards and KMP to adopt KMP remuneration packages that are consistent with arm's length contracting, Bebchuk et al. (2005) concede that the markets for managerial labour, capital and corporate control would impose some constraints on KMP remuneration. However, they argue that these constraints are not stringent and that they allow significant deviations from contracting at arm's length. For example, the market for corporate control imposes constraints on non arm's length contracting which detract from shareholder value by means such as the threat of a takeover. However, most companies have defences against takeovers. For example, a company may have a staggered board. The effect of this is that a hostile bidder cannot gain control before two annual elections are held which enables management to block hostile bids even though such bids may be attractive to shareholders. This means that the hostile acquirer needs to offer a substantial premium over the value of the shares to overcome such incumbent opposition to the takeover (Bebchuk, Coates and Subramanian 2002), or make payoffs to management to facilitate the takeover. The prevalence of golden parachute remuneration provisions is another example of how the disciplinary force of the market for corporate control can be weakened, thus leaving boards and management with the ability to negotiate remuneration arrangements that favour KMP (Bebchuk et al. 2005).

In short, executives' influence over directors, the lack of motivation on the part of the directors to insist on remuneration packages which are beneficial to the shareholders, and or ineffectual governance by the directors, enable executives to obtain rents, that is, benefits greater than those which would have been obtainable if remuneration arrangements are made at arm's length. The criticism is not in relation to the huge amount of remuneration received by itself, but rather, in regard to the remuneration packages where remuneration is insensitive

to performance, the correlation between managerial influence or power and remuneration, and the overly generous gratuitous benefits given to departing executives.

The extent of managerial influence depends on the particular company's governance structure (Bebchuk et al. 2005). According to the managerial influence theory, executives who have more influence should receive more remuneration, or remuneration that is less sensitive to performance, than their less powerful peers. Prior research has shown that CEO remuneration is higher when the board of directors is ineffectual or weaker vis-à-vis the CEO. Situations where CEO remuneration tends to be higher are as follow:

- where the board is large which makes it harder for the directors to band together to oppose the CEO;
- where more of the outside directors have been nominated by the CEO since they would then feel obligated or grateful towards the CEO; and
- when outside directors serve on more than two boards because they are more likely to be distracted (Core, Holthausen and Larcker 1999).

CEO remuneration also tends to be higher when the CEO is also the chairman of the board, but negatively correlated with the share ownership of remuneration committee members (Cyert, Kang and Kumar 2002).

In addition, prior research has shown a negative correlation between remuneration packages that are favourable to executives, and the presence of large outside shareholders. Large outside shareholders tend to monitor the CEO and the board more closely which reduces managerial influence over their remuneration (Bebchuk et al. 2005). Cyert et al. (2002) find that increasing the percentage share ownership of a large outside shareholder reduces a CEO's non-salary remuneration. Another study by Bertrand and Mullainathan (2000) finds that CEOs of companies which do not have substantial outside shareholders tend to receive more 'luck-based' remuneration. That is, remuneration that is linked to profit increases which are caused by external factors such as changes in exchange rates and oil prices rather than by the executives' own efforts. They also find that boards of companies lacking substantial outside shareholders tend to make smaller reductions in the cash component of remuneration when they increase the options-based component.

There also appears to be a negative correlation between executive remuneration and the concentration of institutional shareholders since institutional shareholders are also more likely to monitor the CEO and the directors. Hartzell and Starks (2003) find that a higher concentration of institutional share ownership is associated with more performance-sensitive as well as lower levels of executive remuneration. Parthiban, Kochar and Levitas (1998) find that the effect of institutional share ownership is dependent on the nature of the institutional investors' relationship with the particular company. They discover that there is a negative link between CEO remuneration and the presence of 'pressure-resistant' institutions, being institutions which have no other business dealings with the company and are therefore presumably interested only in the company's share value. However, there is a positive link with the presence of 'pressure-sensitive' institutions. These are institutions that have other business connections with the company such as management of its pension funds and are therefore more susceptible to management pressure.

Furthermore, there appears to be a link between CEO remuneration packages and anti-takeover provisions which make the CEO and the board less vulnerable to a hostile takeover. Borokhovich, Brunarski and Parrino (1997) find that CEOs of companies which have anti-takeover provisions earn above market remuneration prior to adoption of those provisions and earn further significant increases in remuneration after those companies adopt anti-takeover provisions. This is not indicative of the existence of arm's length remuneration contracting. Indeed, Bebchuk et al. (2005) argue that if arm's length contracting does exist, then shareholders should be able to pay risk-averse managers less since their jobs are more secure.

Notwithstanding the above mentioned arguments, there are circumstances which can limit managerial influence. An important factor is what Bebchuk et al. (2005) term as 'outrage' costs. Directors who approve a remuneration package that is obviously inflated and distorted may be subject to scorn and criticism by the media or within their business and social circles as a result of the outrage provoked. These 'outrage' costs can be economic costs such as increased risk of takeover, and or social costs such as embarrassment. The greater the outrage generated, the larger the 'outrage' costs. The extent of the outrage depends on how outsiders, whose views matter to the executives and directors, perceive those remuneration packages. Most executives and directors would want to avoid such potential social and economic costs, thereby reinforcing the constraints imposed by market forces. This contention is supported by a study by Thomas and Martin (2000) who find that during the 1990s, CEOs whose

remuneration were the target of shareholder resolutions criticising such remuneration had their remuneration reduced in the next two years.

2.5 Corporate performance

2.5.1 Corporate versus managerial performance

Company financial performance, which can be a reflection of management performance, can be an appropriate measure of the effectiveness of monitoring (Azim 2008). Shareholders would be interested in company financial performance. Assuming that shareholders are wealth-seeking and are well-informed about their own preferences and interests, a relatively strong association should be expected between the capability of shareholders to monitor management and consequently company financial performance and the link with management remuneration. However, the separation of ownership and control means that shareholders are less able to protect their own interest due to a lack of business knowledge (La Porta et al. 2002). Therefore, they are more dependent on the effectiveness of monitoring. Prior studies support the notion that managers' pursuit of their own interests at shareholders' expense can be alleviated by monitoring mechanisms such as the board of directors and substantial shareholders (Denis 2001; Bonn 2004; Fernandez and Arrondo 2005). One criticism of previous research when examining the efficiency of monitoring to reduce agency costs is the focus on individual monitoring mechanisms and their effect on company performance, such as monitoring by the board only or monitoring by shareholders only, and the effect on company performance. However, such research largely ignores the possibility of the substitution and complementary effects between the monitoring mechanisms (Azim 2008).

In business, company performance is a generic term used to understand how well or poorly a company is doing compared to similar companies or in the same industry or as a trend over a period of time. Company performance can be measured both qualitatively and quantitatively. Shareholders are more interested in knowing how their company is performing quantitatively in order to review investment decisions (Edwards and Clough 2005). In this study, quantitative firm performance is measured in terms of financial performance, specifically with accounting and market-based measures.

2.5.2 Corporate financial performance: accounting and market-based

Performance measures are crucial in evaluating the company, and help ensure the effectiveness of monitoring methods and maintain organisational control. This can help a company achieve its organisational objectives and goals (Azim 2008). Financial accounting information is generated from a company's accounting and reporting systems. This information provides quantitative data on how a company has performed over a certain period of time and its financial position. The financial statements supplied by management, and in particular listed companies in the form of annual reports, are verified by external auditors. According to Sloan (2001), accounting information, which is the product of a governance process, is necessary in helping to ensure that most governance mechanisms operate efficiently.

Profitability is identified by Drucker (1968, p. 99) as 'the ultimate test of business performance'. Although it is an accounting measure, he sees it as a measure of the net effectiveness of an organization's efforts. In addition, financial performance management is crucial for long-term survival (Kloot and Martin 2000).

It is argued that accounting-based financial performance measures are reasonable proxies for shareholders' interests based on the central tenet that accounting earnings will, over time, indicate shareholder wealth increments (Ohlson 1995; Feltham and Ohlson 1995). Chow, Haddad and Hirst (1996) argue that financial measures play a role in a company's competitive strategies for creating future value.

Market information is also used to measure a company's performance (Productivity Commission 2009). Measures which use a mix of accounting and market information are referred to as hybrid measures (Azim 2008).

Prior research (Lindenberg and Ross 1981; Atkinson, Waterhouse and Wells 1997) indicates that accounting and hybrid performance measures are closely related to corporate governance decisions. Previous corporate governance research uses different kinds of company performance measures including return on assets (Hoskisson, Johnson and Moesel 1994),

earnings per share (Pearce and Zahra 1992), and return on equity (Baysinger et al. 1985). Research which uses company performance measures tend to rely on financial accounting measures (Atkinson et al. 1997) both as a control and as a criterion variable to evaluate the effect of various monitoring mechanisms. Financial measures are retained and viewed in the larger context of the company's competitive strategies for creating future value (Chow, Haddad and Williamson 1997). Rajan and Zingales (1998) argue that accounting information has a positive relationship with economic performance. Accounting information does have some major limitations. Firstly, although accounting information is useful and important in corporate governance studies, not all agency costs are reflected in the accounting measures (Wiwattanakantang 2001). Secondly, a major concern with accounting measures is that they are historical records which lag behind the actual action (Kiel et al. 2003). These limitations have led researchers to use hybrid performance measures, such as the market to book ratio. Hybrid performance measures reflect the actual condition of the particular company in the marketplace. Previous research use both accounting and market indicators for determining the performance of the company. However, most analysts and large investors concentrate on hybrid measures of corporate performance to forecast the feasibility of the company. Bacidore, Boquist, Milbourn and Thakor (1997) argue that hybrid measures are appropriate in measuring shareholders' wealth creation. The size of the business, business risks, and social and political environment are all reflected in hybrid company performance indicators. The choice of hybrid company performance measures may generate different results for different countries. Furthermore, an assumption in order to use hybrid indicators to measure corporate performance is that shares prices reflect the company's true value (Lindenberg et al. 1981). This suggests that hybrid measures that represent the true value of a company can only be found in an efficient capital market. Moreover, share prices can fluctuate due to investors' behaviour and events such as the global financial crisis.

More recently, studies such as by Merhebi et al. (2006), Doucouliagos et al. (2007) and the Productivity Commission of Australia (2009) have shifted away from hybrid measures towards purely accounting based measures such as ROE and purely market based measures such as market or shareholders total returns as measures of company performance.

For this study, accounting based and market based measures are used as indicators of company performance while the market-to-book ratio (refer to chapter 3), which acts not just as a hybrid measure of corporate performance but also as a proxy for unrecognised intangible

assets and for company growth opportunities in investment opportunity set, is used as a control variable. While there are many measures of company performance that can be used, this study adopts the company performance measures used by the Productivity Commission (2009).

Widely used financial performance measures are discussed as follows:

Return on equity (ROE): This is a common accounting measure of company performance (Azim 2008). In general, ROE is calculated by dividing net profit by shareholders equity. The larger the ROE, the larger the gain, in terms of accounting profit, obtained by shareholders for every dollar invested in the company as equity. Therefore, it is a key indicator because it provides information on how well management is employing shareholders' funds, as invested by the shareholders, to generate returns in the form of profit (Gay et al. 2007). It is also useful for comparing the profitability of a company with other companies. There are some shortcomings with this measure. For example, the level of ROE does not tell the owners, the shareholders, whether their company is creating shareholder wealth or destroying it. In addition, there is no risk component included in the measurement. Furthermore, ROE is based on accounting information which indicates the past success of the company, but not its future prospects. Despite these shortcomings, ROE is a common accounting measure of corporate performance (Denis and Denis 1994; McConnell and Servaes 1990; Holderness et al. 1988; Demsetz and Lehn 1985; Merhebi et al. 2006; Productivity Commission 2009).

Net operating cash flow: Accounting information is prepared on an accrual basis as opposed to a cash basis. According to AASB 107, cash flow information is useful in enabling users of financial statements to evaluate the changes in net assets of a company and its financial structure in terms of its liquidity and solvency (ICAA 2009). Cash is crucial to a company's operations (Gay et al. 2007). For example, employees need to be paid in cash, not as accrued wages. Liquidity, in particular cash, is essential especially in times of financial crisis such as the GFC. In addition, AASB 107 states that cash flow information enhances the comparability of the reporting of operating performance by different companies. This is because it eliminates the effects of using different accounting treatments, which are permitted by the accounting standards, for the same events and transactions. Accordingly, net operating cash flow is used as a measure of company performance too (Niap et al. 2012a). Variants of this measure may be used such as the standard deviation of the company's cash flow (Francis

et al. 2008). However, since this is an indication of the company's cash flow variability, net operating cash flow is preferred since this shows the cash flows generated from the daily activities of the company such as producing and selling inventory (Gay et al. 2007). Therefore, this study adopts a corporate performance measure which is not commonly used in prior research.

Total shareholders or market returns per share: Market measures of performance are share price movements for the year and dividends per share (Doucouliagos et al 2007). This market based measure of company performance shows how much returns shareholders are getting for each share that they own. This measure comprises of two components. The first component reflects the capital gain that shareholders get. It is the change in the share price from the start to the end of the financial year. The second component is effectively the dividend yield. It shows how much dividends is earned for each share owned by the shareholders. This measure has been used in more recent research (Doucouliagos et al 2007; Productivity Commission 2009) and is a measure which would be of interest to shareholders.

Other corporate financial performance measures: Although there are other measures of company financial performance, these are not included in this study's model since the abovementioned measures are preferred, and because of multicollinearity. For example, return on assets (ROA), which is the company's profit or earnings divided by its total assets, shows how much profit a company is generating on the assets used in its business. In other words, it shows how efficiently the company is making use of its assets. However, ROE is preferred for this study since it has a shareholder focus.

Another possible measure is earnings per share (EPS). This shows how much accounting based profit has been earned during the financial year on each of the shares held by the shareholders. However, this EPS ratio can be manipulated simply by issuing more shares (Azim 2008) or decreasing the number of shares via buyback. A preferred measure is market returns per share since this shows exactly how much shareholders are earning, for every share that they own.

Tobin's Q and its limitations: Share returns depend on the company's assets and growth potential (Welty 2010). A frequently used proxy for growth opportunities is Tobin's Q. Tobin's Q is a ratio that relates a company's market value to the replacement cost of its assets

and the extent by which the former exceeds the latter is an indication of that company's future growth opportunities. However, this research does not use Tobin's Q to measure company performance even though it may be widely used. This is because its operational definition is unsettled (Azim 2008). According to Kogan and Papanikolaou (2010), Tobin's Q is not a perfect proxy for anything because it incorporates information about many things. Market value may include subjective elements such as analysts' views and speculation. Furthermore, the book value of a company's assets is often used as a proxy for the replacement cost of capital. However, book value may depend on the subjective estimates of the value of those assets. It is also contended that the validity of Tobin's Q at the level of individual companies is, at best, questionable. Dybvig and Warachka (2011) argue that the problem with using Tobin's Q as a proxy for company performance is that the relationship between Tobin's Q and company performance is confounded by endogeneity. For example, inefficiency as a result of underinvestment decreases company performance but inflates Tobin's Q. Consequently, a high Tobin's Q is not necessarily an indication of good company performance.

2.5.3 Corporate productivity performance and the stakeholder perspective

Gielen, Kerkhofs and van Ours (2009) note that there are only a limited number of studies to date that use company level panel data to investigate the productivity effect of performance related remuneration, and these are done on a case study basis only. Cardoso, Guimaraes and Varejao (2011) lament that whilst there have been studies in regard to productivity; there is limited study on productivity and wages comparison. Most prior studies have focused on determining whether there is a link between executives' remuneration and financial profitability, rather than productivity for example Merhebi et al. (2006). However, in recent years, productivity has been advocated by authors such as Briskin (1987) as a desirable performance measure for both internal and external users (Kim, Joo and Choi 1996) although cash flow has also been proposed as a useful measure for decision making (Ashton 1976). External performance measures tend to influence management behaviour to some extent (Kim et al. 1996). Productivity measures are touted to be better indicators of a company's financial health than reported earnings. This is because earnings can be influenced by the different treatment of items such as depreciation and inventory that are permissible under accounting standards. Furthermore, earnings can be smoothed for example through the use of

provisions. In addition, short term profits may be achieved at the expense of productivity by means such as reduction of maintenance works, capital expenditure, and research and development. Therefore, it is possible that productivity may be declining despite profits increasing in the short term (Kim et al. 1996). As such, Taussig and Shaw (1985) argue that productivity may assist in forecasting future profits since a decrease in productivity may presage a decrease in earnings.

Whilst agency theory focuses on management and shareholders, stakeholder theory covers a broader group of stakeholders. The ethical or moral (also known as the normative) perspective of stakeholder theory posits that all stakeholders have the right to be treated fairly by a company regardless of the stakeholders' (economic) power over the company (Deegan 2006). According to this theory, companies have a duty, through decisions made by their CEOs, to consider not only the needs of their shareholding stakeholders but also those of their non-shareholding stakeholders through stakeholder management (McWilliams and Siegel 2001). The managerial branch of stakeholder theory, however, posits that the more important a stakeholder is to the company, the more effort the company will exert in managing the expectations of that stakeholder (Gray, Owens and Adams 1996). Freeman (1984) defines a stakeholder as any individual or group who can affect, or is affected by, the achievement of a company's objectives. Therefore, stakeholders may include not just shareholders but also the government including the Australian Tax Office, employees, local communities, future generations, and suppliers and creditors (Deegan 2006). Stakeholder theory is similar to legitimacy theory in that both theories conceptualise the company as part of a broader social system where the company affects, and is affected by, other groups within society (Deegan 2006). However, while legitimacy theory deals with the expectations of society in general, stakeholder theory deals specifically with the different stakeholders within society.

Based on the two abovementioned theories, one would expect CEO remuneration to be linked with company productivity which can be considered as a return to stakeholders as well as a measure of company performance. Conventional theory posits that improvements in productivity drive wages upwards (Niap et al. 2012b). A study by Gielen et al. (2009) finds that performance-related pay increases company productivity and employment growth. A more recent study by Cardoso et al. (2011) finds that wages are related to productivity. Fuess and Millea (2006) find that wage increases for Germans are responsive to improvements in worker productivity. A fundamental question is whether productivity gains drive, or are

driven, by higher remuneration. That is, the relationship between remuneration and labour productivity can be bi-directional. If remuneration drives productivity, the question then is how and why managerial remuneration has helped boost worker productivity. Fuess et al. (2006) suggest that it may be due to managers deploying capital more effectively; or organising and coordinating operations more efficiently. Increasing remuneration may create incentives to boost productivity. Alternatively, higher wages may breed complacency and cause productivity to decline (Fuess et al. 2006).

2.5.4 Measures of productivity

2.5.4.1 Partial productivity (physical, labour and structural) and multifactor (or total) productivity

The question then arises: What is productivity? Productivity is broadly defined by Zheng (2005) as the ratio of a volume measure of output to a volume measure of input, where input refers to the resources utilised (Coates 1980; Kim et al. 1996). That is, it is a measure of the relationship between actual inputs utilised and actual outputs produced; where the higher the outputs for a given quantity of input, or the lower the inputs for a given quantity of outputs, the greater the productivity.

While this definition of productivity may be simple, the reliable measurement of productivity is not. Regardless of how productivity is measured, consistency in the measurement is important (Zheng 2005). Inputs and outputs can be measured not just by quantities but also by costs. Where costs are used, the amounts need to be stated in real terms to eliminate any changes due to differences in the input prices in different years (Horngren, Datar, Rajan and Ittner 2009). Calculating the productivity measure by itself is not particularly meaningful. A comparison needs to be made against some benchmark. Whilst comparing against similar companies would be useful, obtaining accurate comparable data would be difficult. Therefore, it is common practice for a company to compare its own productivity measures over time (Horngren et al. 2009).

Productivity analysis is intended to gauge the effectiveness in which scarce resources are utilised. At the national level, this may be the output or value-added per head of the workforce or population; at the industry level this may be the value-added per employee; and at the company level this may be value-added per unit of labour cost or per unit of space occupied (Coates 1980). The partial, or single-factor, measure of productivity involves only one type of input. For example, capital productivity measure has only a capital input. Likewise, labour productivity measure involves only labour input. Capital and labour inputs are referred to as the two types of primary inputs (Zheng 2005). It is useful to also add partial measures together to create aggregate measures of productivity where productivity is heavily dependent on more than one input (Brinkerhoff and Dressler 1990). Where two or more inputs are involved, the corresponding productivity measure is referred to as multifactor productivity (Zheng 2005). Total factor productivity considers all relevant inputs simultaneously and is intricately related to minimising total cost which is a financial objective (Horngren et al. 2009). The advantage with using partial productivity measures is that it is easily understood by employees since the focus is on a single input. Partial measures are sometimes more useful than total measures because by isolating one or a few inputs, this helps in understanding the impact that the isolated input has on productivity (Brinkerhoff et al. 1990). This enables fine level improvements and adjustments to operations. The drawback is that management cannot evaluate the effect on overall productivity (Horngren et al. 2009). It allows management to manipulate the productivity measure. For example, if capital is used as the input measure, management may substitute capital with labour, thereby increasing that productivity measure but not total productivity. Therefore, using both partial and total factor productivity measures is useful because the strengths of one offset the weaknesses of the other (Horngren et al. 2009).

According to the literature, capital is comprised of intellectual capital (IC), which includes human capital, and physical capital. Although the growing importance of IC has been recognised in the academic and business literature during the past decade, little progress has been made in accounting for IC in the financial statements of companies (Sonnier 2008; IFAC 1998). This raises concern that financial statements may have lost a significant portion of their relevance to investors (Francis and Schipper 1999). Central to the IC construct is knowledge (Kannan and Aulbur 2004). According to Edvinsson and Malone (1997), IC comprise of human capital and structural capital. They define human capital as the collective skill, knowledge, ability and innovativeness of the company's individual employees to

execute the company's tasks. This includes the company's culture, values and philosophy, all of which are dictated by human personnel. Accordingly, this is reflected in the company's labour costs. Structural capital meanwhile is defined by them as the patents, trademarks, customer capital (that is, the relationships cultivated with key customers) and everything else of organisational capability that supports those employees' productivity. Also included is supplier capital which is the relationships of the company with its financiers, and other suppliers of goods and services to the company (Sonnier 2008). This is essentially captured in intangible assets.

Lev (2001) has a rather similar definition although he uses the term intangibles, knowledge assets, and intellectual capital (IC), as widely used in the accounting literature, economics literature, and management and legal literature respectively, interchangeably. Where the claim to future benefits is legally protected or secured such as trademarks, patents and copyrights, the asset is referred to as intellectual property. However, he contends that the three major nexuses, or generators, of intangibles are human resources, organisational practices and discovery or innovation. An intangible asset, as defined by Lev (2001), is a claim to future benefits that has neither a physical nor financial embodiment. Therefore, this definition covers goodwill, patents, brands, and unique organisational structures that create cost savings such as an internet-based supply chain. He further contends that because intangibles often interact with tangible and financial assets to create company value and economic growth (for example the knowledge and technology embedded in an aeroplane), it can be difficult to measure and value such intangibles. His definition is not dissimilar to the definition of intangible assets according to Australian accounting standard AASB138 that intangible assets are identifiable non-monetary assets without physical substance (Deegan 2007). Monetary assets are money held and assets that are to be received in determinable or fixed amounts of money. The classification of intangible asset as identifiable or unidentifiable is important because AASB138 only permits the recognition of identifiable intangible assets with the exception of externally acquired, as opposed to internally generated, goodwill. Intangible assets are deemed identifiable if a specific value can be placed on each individual asset, and can be separately identified and sold. Such assets include trademarks, licences, copyrights, research and development, brand names, mastheads, and patents. Unidentifiable intangible assets such as established reputation, loyal customers, reliable suppliers, and good employees, on the other hand, cannot be separately sold, and cannot be individually measured with acceptable levels of reliability even though they may be valuable

to the company. However, they may be treated as a composite asset, goodwill, but only if purchased/acquired externally as opposed to internally generated goodwill under AASB 138.

The advent of information technologies as well as intensified business competition has increased the importance of intangibles as a major driver of businesses. However, authors such as Lev and Zarowin (1999), Lev (2001) and Kannan et al. (2004) as well as the IFAC (1998) argue that the traditional accounting system is inadequately designed to account for such intangibles, hence the decline in the relevance of financial statements. The increasing gap between the market and book values of companies is used as an indication that the traditional accounting system does not accurately depict the assets and resources of a company especially in a high-technology company (Lev et al. 1999; Lev 2001). Market-to-book ratio has been used in prior research as a proxy for unrecognised intangible assets while research and development (R&D) expenditure as a percentage of total assets is a proxy for investments in unrecorded intangible assets (Francis et al. 1999). Francis et al. (1999) find that the across-year average market-to-book ratio for high-technology companies is 3.18 while the average for traditional sector companies is 1.57. They also find that high-technology companies invest on average 9.2 percent of total assets on R&D across the years whereas low-technology companies only spend 0.8 percent.

Sonnier (2008) argues that all companies rely on IC in their business operations and that it is generally accepted that high-technology companies rely a lot more on IC compared to companies in the traditional sector or low-technology (such as manufacturing) industries.

The findings in regard to the notion that financial statement information is consistently less value relevant for high-technology companies than for traditional industry companies are mixed. Authors such as Collins, Maydew and Weiss (1997) and Lev et al. (1999) observe that whether a company is in the high-technology or traditional sector does make a difference whereas Francis et al. (1999) finding does not support that notion.

R&D expenditure is not used in this study to determine whether companies fall under the high-technology or traditional sector industries because of the lack of data. Companies in Australia are not required by law to disclose their R&D expenditure in their annual reports. Data availability is a factor that is taken into consideration by Kim et al. (1996) in their study. Similar to Niap et al. (2012b), this study does not classify companies into either the high-

technology or traditional sector. This is because some companies may be involved in multiple businesses and therefore may fall under both sectors. Furthermore, a review of the literature shows that the classification of industries by previous studies into either the high-technology or traditional sector is not exhaustive. Below is a compiled list of high-technology industries and traditional industries based on the existing literature (Francis et al. 1999; Sonnier 2008):

Table 2.2 List of high-technology and traditional industries (selected only)

High-technology industries	Traditional industries
Pharmaceuticals / drugs	Agricultural products – livestock
Computer and office equipment	Heavy construction
Electrical machinery and equipment	Construction – special trade
Electrical transmissions and distribution equipment	Dairy products
Electrical industrial apparatus	Textile mill products
Household appliances	Lumber and wood products
Electrical lighting and wiring equipment	Wood buildings, mobile homes
Household audio, video equipment, audio receiving	Paper and allied products
Communication equipment	Rubber products
Electronic components, semiconductors	Miscellaneous plastics products
Computer hardware (including mainframes, terminals, discs, scanners, graphics systems, peripherals and equipment)	Cement hydraulic
Telephone communications	Blast furnaces and steel works
Computer programming, software, data processing	General industrial machinery and equipment
Research, development, testing services	Motor vehicles and motor vehicle equipment
Professional, scientific and technical services	Miscellaneous manufacturing
Internet providers, web search portals and data processing services	Railroads
Internet publishing and broadcasting	Trucking, courier services
	Water transportation
	Scheduled air transportation, air courier
	Grocery stores

Industries such as mining are not in the list. It is also noted that Sonnier (2008) refers to the North American Industry Classification System (NAICS) when compiling her list of industries. However, the Global Industry Classification System (GICS), which was developed jointly by Standard & Poor's and MSCI, is adopted in Australia.

2.5.4.2 Gross versus net value-added productivity measures

Measures of productivity generally involve calculating the ratio for value-added as the measure for output (Kim et al. 1996). While there is no universally accepted definition,

value-added at the company level is generally defined as the value, in monetary terms, created by the efforts of a company and its employees (Coates 1980). This equates to sales revenue less the cost of materials and services purchased externally by the company. Similar to conventional earnings, value-added is a residual notion, being the difference between a company's efforts and its accomplishments. The main difference is that earnings represents rewards attributed mainly to the company's shareholders whereas value-added includes the rewards available to a wider group of corporate stakeholders such as employees, suppliers and the government. Accordingly, interest expense, which is incurred as a result of financing provided by suppliers of finance, is included in Gross Value-Added (GVA) since that reflects a company's financing decision, being the company's mix of equity and debt/gearing, rather than its business operations. Likewise, income tax is included in GVA since a country's tax regime is dictated by the government, not the company. In addition, GVA should include the cost of depreciation to ensure a consistent measure of capital input as a flow of capital services which reflects the amount of service that each asset provides during a period (Zheng 2005). The ABS recognises that assets include inventories, land, livestock, intangible assets and, machinery and other building and structures. Dividends, which are a return of the company's earnings to shareholders, are also added to GVA. Therefore, this calculation of GVA represents the return to a broader group of stakeholders, not just to shareholders.

GVA is used rather than net value-added because it is not affected by a company's choice of depreciation method. Although Kim et al. (1996) use both earnings before extraordinary items and earnings after extraordinary items in calculating their constructs; they do not find any significant difference between both measures. For this study, earnings after extraordinary items is used since the CEO, as the leader of the company, is ultimately responsible for the company's strategic directions and operations such as the sale of the company's non-core business unit (Niap et al. 2012b).

Conceptually, GVA is usually calculated as follows (Kim et al. 1996):

$$\begin{aligned} \text{GVA} &= \text{Sales revenue} - \text{cost of externally purchased materials and services} \\ &= \text{Retained earnings} + \text{wages} + \text{interest} + \text{depreciation} + \text{taxes} + \text{dividends.} \end{aligned}$$

However, studies such as by Kim et al. (1996), and Ho and Williams (2003), modify the calculation of GVA at the operational level as follows:

GVA = Earnings after tax before dividend + depreciation and amortisation + net finance expenses + Human capital expenditure (labour related expenses)

And

Net value-added (NVA) = Earnings after tax before dividend + net finance expenses + Human capital expenditure (labour related expenses).

For the purpose of this research, three primary inputs are used to calculate productivity as follow: labour, structural capital and physical capital.

Common measures of input, being the denominator in the productivity measure, are labour expenses, the number of employees and plant assets (Coates 1980; Taussig et al. 1985; Kim et al. 1996).

According to Coates (1980), who refers to Gold (1974), output per man-hour may not measure the productive contributions of labour, or even productivity efficiency as a whole. In addition, Gold (1974) argues that increases in output per man-hour may not reduce unit labour costs. Moreover, even if increases in output per man-hour result in a correspondingly proportionate increase in hourly labour rates, production costs are more likely to rise rather than remain unchanged, particularly in capital-intensive industries such as the steel industry. Accordingly, it follows that productivity analysis must be based on the cost structure and profitability of a company (Coates 1980). Furthermore, calculating labour input based on hours worked, or by the number of employees, does not capture the differences in education, skills, health and professional experience (Zheng 2005).

2.5.4.3 Productivity measures chosen for this study

Similar to Ho et al. (2003) and Niap et al. (2012b), the following partial productivity measures are used in this research:

- a. intellectual capital productivity (ICP) which is split into the following two components:

- labour productivity (LABOR) (Kim et al. 1996);
- structural productivity (STRUC); and
- b. physical capital productivity (PHYSC) as measured by GVA per dollar of physical assets.

Labour productivity is isolated in this study since the modern company is relatively more dependent on its employees (Lev 2001). Labour costs are considered an appropriate proxy for human capital (Lajili and Zeghal 2005). In addition, the concept of structural productivity is about the use of all the capital resources other than the physical capital recorded on the balance sheet. That is, conceptually, structural capital is all the intellectual capital of the company, both its off-balance sheet intellectual capital plus any intangibles recorded on the balance sheet. Since data on the value of off-balance sheet intellectual capital is not available, a proxy of this value is labour costs. The assumption is all internally generated intellectual capital is derived from the company's human resources and the greater the cost of these human resources, the greater the intellectual capital value that the firm can generate. So, while 'labour costs + intangibles' is a poor proxy measure of the value of structural capital, it is the most accepted measure in the literature. Therefore, it makes sense, conceptually, that CEO remuneration would be assessed against the productivity of structural capital. It does not make good argument that CEO remuneration would be assessed against the productivity of the book value of only intangibles recognised on the balance sheet where the accounting standards apply very restrictive recognition criteria.

To calculate productivity measures, data are sourced predominantly from annual reports which are derived from the companies' accounting systems to ensure objectivity and credibility since these annual reports are audited (Taussig et al. 1985). Furthermore, while output can be measured in physical units such as tons or kilowatt-hours, output is measured in dollars for this study, just as is done in macroeconomics. It is important that productivity can be measured because of the truism that what gets measured gets done (Brinkerhoff et al. 1990).

Accordingly, the formulas for the partial productivity measures are as follow (Niap et al. 2012b):

$$\text{LABOR} = \frac{\text{GVA}}{\text{Labour cost}}$$

$$\text{STRUCT} = \frac{\text{GVA}}{\text{Labour cost} + \text{intangible assets (net of amortisation)}}$$

In regard to exploration and evaluation assets which are peculiar to the mining industry, AASB 8 dictates that companies should classify them as tangible or intangible according to the nature of the assets acquired. As such, what is disclosed in companies' annual reports is taken as correct (Niap et al. 2012b).

$$\text{PHYSC} = \frac{\text{GVA}}{\text{Total physical assets (net of accumulated depreciation as well as net intangibles)}}$$

The multifactor or total productivity measure (MULTI) is then calculated, which is a combination of the three abovementioned productivity measures (Niap et al. 2012b):

$$\text{MULTI} = \frac{\text{GVA}}{\text{Labour cost} + \text{intangible assets (net of amortisation)} + \text{Total physical assets (net of accumulated depreciation as well as net intangibles)}}$$

Chapter 3. FRAMEWORK AND HYPOTHESES DEVELOPMENT

3.1 Introduction

This chapter sets out the conceptual framework, the development of the hypotheses and identification of control variables for this study. Section 3.2 sets out the conceptual framework which lays the foundation for developing the hypotheses for this study. Under this conceptual framework, the determinants of CEO remuneration for this study are classified under three categories, namely CEO personal factor, governance factors and company performance factors. In section 3.3, five hypotheses are developed based on this conceptual framework. Lastly, section 3.4 identifies the control variables for this study.

3.2 Conceptual framework for this study

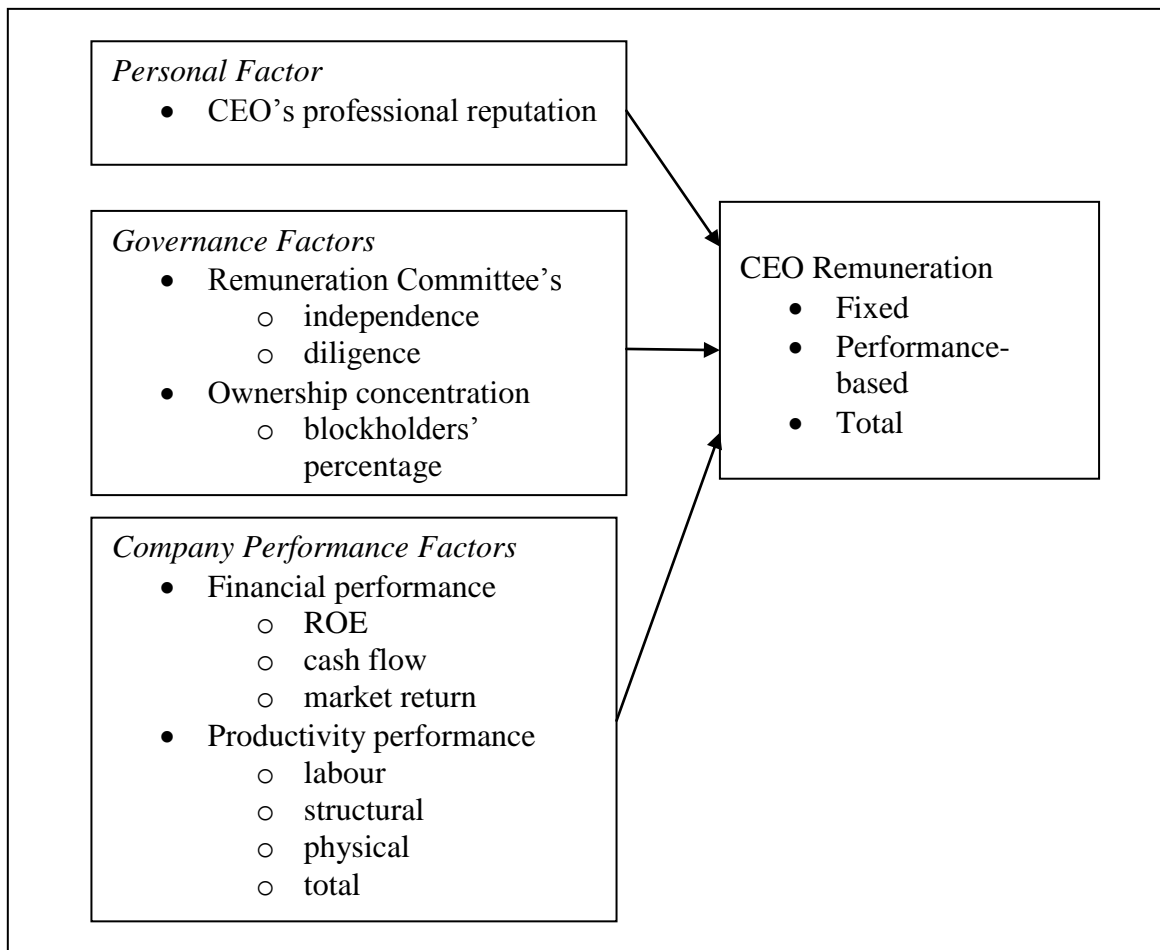
Building on the literature review in Chapter 2, a conceptual framework is constructed for this study as depicted in Figure 3.1. Underlying this framework are two theoretical perspectives that are deemed to drive the determination of the level of CEO remuneration. The first perspective takes a psychological view of the CEO's personal traits. Specifically, for this study, the attributes of a CEO that contribute to that person's reputation are considered. Personal reputation could be measured by a mix of character traits and accomplishments. If the measurement is confined to the publicly disclosed professional attainments of a CEO, then the narrower concept of professional reputation would be identified. Either way, a measure of reputation needs to be strong enough to differentiate an individual and signal that individual's values and quality in a way that generates favourable perceptions from others (Bromley 2000; Ranft et al. 2006). This favourable perception about a CEO due to his or her professional reputation, could manifest in the level of remuneration commanded.

The second theoretical perspective draws on agency theory which is based on economic rationalism. The main agency theory focus of this study is the providing of incentives that seek to align the economic interests of the agent (that is, the CEO) to the interests of the

principal (that is, the shareholders, particularly the blockholders). This takes the form of aligning company performance measures to the CEO’s remuneration. Additionally, the use of direct governance mechanisms to monitoring CEO remuneration, through the quality of the remuneration committee, is another lens on agency theory that can provide an explanation of the level of CEO remuneration.

The conceptual relationship depicted in Figure 3.1 will next be discussed in order to generate a set of hypotheses that can operationalise and empirically test these relationships.

Figure 3.1: Conceptual framework



As can be seen from the diagram above, the conceptual framework for this study sets out three categories of determinants of CEO remuneration. The first category is CEO professional reputation which is based on the first theoretical perspective that takes a psychological view of the CEO’s personal traits. The second and third categories, governance factors and company performance factors, are based on the second theoretical perspective

that draws on agency theory. This conceptual framework lays the foundation on which the hypotheses of this study are developed.

3.3 Development of hypotheses

For this study, several hypotheses will be developed based on prior literature reviewed in the previous chapter. These hypotheses will be empirically tested using data and methods explained in the next chapter. In each sub-section below, the hypothesis for each independent variable will be stated, followed by a justification for that hypothesis.

Hypothesis 1 (H1): CEO professional reputation is positively related to the level of CEO fixed remuneration.

It is hypothesised that there would be a positive relationship between the fixed component of CEO remuneration and CEO professional reputation since the company would make an objective determination of the level of base remuneration that should be given to a CEO which would commensurate with the CEO's qualities, or reputational capital. Some authors contend that fixed remuneration is not sensitive to performance (Doucouliagos et al. 2007) but to factors relating to remuneration comparisons in the executive labour market (Ogden and Watson 1996). This is because it would be the norm for the CEO fixed remuneration amount to be negotiated and determined at the time of entering into an employment contract.

Hypothesis 2 (H2): The extent of independence of the remuneration committee is inversely related to the level of CEO total remuneration.

There is evidence that corporate governance mechanisms such as the composition of the board of directors, the existence of a remuneration committee and the presence of outsiders who hold large blocks of shares, coupled with the design of executive remuneration contracts, mitigate agency problems (Pukthuanthong et al. 2004). This is because CEOs are more likely to engage in rent-seeking behaviour in companies with relatively poor corporate governance structure because they are more likely to wield greater power and influence (Bertrand and Mullainathan 2001; Francis et al. 2008). Researchers such as Hermalin et al. (2003) and Francis et al. (2008) view the board of directors' independence as a proxy for CEO power.

Shleifer et al. (1997) define corporate governance as a set of mechanisms, both market-based and institutional, which induce the self-interested controllers of the company to make decisions regarding how the company would be operated which would maximise the value of the company to its owners, being the suppliers of its capital. Dalton, Dailly, Ellstrand and Johnson (1998) argue that the amount of CEO remuneration relates to the composition of the remuneration committee. Pukthuanthong et al. (2004) contend that outside directors are more concerned that the company's remuneration structure aligns with shareholders' interests so as to enhance their own reputation as effective board members. On the other hand, Lee (2009) is of the view that CEO remuneration does not appear to relate to board structure. She cites Kren and Kerr (1997) who suggest, from a theoretical perspective, that the benefit of outside directors' objectivity may come at the cost of an information deficit in regard to the CEO's true contribution to performance outcomes. The board would have to rely on other sources of information such as remuneration consultants, thereby weakening the outside directors' role in monitoring executive remuneration. Lee's (2009) study, however, focuses on performance-related remuneration only. According to Bebchuk et al. (2005), director behaviour may be subject to an agency problem since directors may have economic, psychological and or social incentives to "go along" or acquiesce with the CEO's remuneration package. For example, if directors object to the remuneration package sought by the CEO, directors may hurt their chances of being nominated for re-election to the board since the CEO may have significant influence over the nomination process. At the very least, objecting will mean a very unpleasant encounter with the CEO.

The approach to corporate governance in Australia is based on the Anglo-Saxon model (Clarke 2007). This model dictates that private enterprises in shareholder economies seek to maximise returns for investors. This model is prevalent in the United States, the United Kingdom as well as New Zealand, and is also known as the outsider system of market based economies. Under this model, problems associated with the principal and agency relationship are assumed to be of paramount significance. The ASX (2003; 2007) recommendation of the establishment of a remuneration committee which comprises independent members as the majority to oversee the remuneration of company executives is based on this model. Such board composition is linked with board monitoring activities, and hence we expect that the greater the ratio of independent directors, the greater the scrutiny on CEO remuneration (Doucouliagos et al. 2007). Other researchers such as Laux et al. (2009) and Munter et al.

(1995) also point out the importance of the board of directors in monitoring management's activities. This implies downward pressure on CEO remuneration (Cheng et al. 2011).

Hypothesis 3 (H3): The remuneration committee's diligence, as measured by the number of meetings attended, is inversely related to CEO total remuneration.

Similar to the arguments for the hypothesis on the independence of the remuneration committee as mentioned above in hypothesis 2. The frequency of board meetings can be viewed as a proxy for the monitoring effort expended by the directors (Vafeas 1999; Francis et al. 2008).

Accordingly, the greater the number of meetings attended by members of the remuneration committee, the more likely that this implies an increase in monitoring by the remuneration committee which implies downward pressure on CEO remuneration.

Hypothesis 4 (H4): Performance-based CEO remuneration is positively related to corporate financial performance (both accounting-based and market-based)

Classical agency theory arguments have dominated the executive remuneration literature. Agency theory (Berle et al. 1932; Jensen et al. 1976) posits that CEO remuneration may be used as a mechanism to align management's interests with those of the shareholders and that this mechanism solves the issue of agency costs that arises due to the separation of management and ownership. Remuneration, according to Doucouliagos et al. (2007), is an important mechanism for soliciting effort, ensuring that executives act in accordance with owners' interests, and rewarding productivity. In general, the empirical evidence from international studies such as in the UK (Conyon et al. 1995) and especially from the USA (Jensen et al. 1990; Aggarwal et al. 1999), as discussed in section 2.4.3, show that there is a significant positive correlation between executive remuneration overall and corporate performance where corporate performance is partly the observable result of CEO performance (Merhebi et al. 2006). In contrast, prior Australian studies (Defina et al 1994; Izan et al. 1998; O'Neill et al. 1999) find a negative or insignificant link between CEO remuneration and corporate performance. One exception is a recent study in Australia by Merhebi et al. (2006) which shows a positive and statistically significant association between CEO remuneration and corporate performance. These findings support the agency theory

contention as mentioned earlier that CEO remuneration is a solution to agency costs. A more recent study by the Productivity Commission (2009), however, finds no statistically significant relationship in most instances. This appears to support Bebchuk et al. (2003) contention that CEO remuneration may pose an agency problem. Their view, which is shared by Yermack (1997), is that while managerial remuneration, such as CEO remuneration, is designed to alleviate agency costs; managerial remuneration is also part of the agency problem because managerial remuneration may be the result of managerial entrenchment or power, and can be characterised as rent-seeking behaviour. It is hypothesised that there is a positive relationship between CEO remuneration, especially the performance based component, and company performance since the CEO should be appropriately rewarded if the company performs well (agency theory incentive that aligns CEO and shareholders' interests), and vice versa. Accounting and market-based measures of company performance are used based on the argument that CEOs' performance is assessed and compensated on the basis of accounting measures. The counter argument is that accounting measures can be manipulated easily whereas it is more difficult to manipulate the market for an extended period of time (Merhebi et al. 2006). Return on equity (ROE) is used as an accounting measure of company performance (Merhebi et al. 2006). Net operating cash flow is also used as a measure since liquidity, especially cash, is crucial in times of financial crisis such as the GFC (Niap et al. 2012a). Market return to shareholders, that is dividend yield and capital gains in terms of annual share price movements whether realised or unrealised, is used as a market based measure (Productivity Commission 2009). Shareholders are interested in higher returns to their investments (Doucouliagos et al. 2007) which can be attributed to, among other factors, managerial effort.

Hypothesis 5 (H5): Performance-based CEO remuneration is positively related to company productivity performance

In regard to using productivity measures to measure corporate performance, it is expected, based on the literature, that there is a positive relationship between CEO remuneration and company productivity since the CEO should be appropriately rewarded if the company performs well (agency theory incentive that aligns CEO and shareholders' interests; and stakeholder theory that the company should consider the (economic) welfare of a broader group of stakeholders), and vice versa. This positive correlation between CEO remuneration

and company performance is expected even where moral hazard and imperfect monitoring prevail (Gregory-Smith 2012).

Hypothesis 6 (H6): The percentage of shares owned by substantial shareholders is inversely related to CEO total remuneration.

It is argued that ownership structure, in addition to board characteristics, plays an important part in corporate governance (Pukthuanthong et al. 2004). While managerial ownership influences the extent to which management and shareholders' interests coincide, a high ownership of shares by management may weaken board independence. In addition, good corporate governance may be affected by the extent of outside ownership (Pukthuanthong et al. 2004) since outside owners can be expected to monitor board performance and remuneration as well as company performance (Doucouliagos et al. 2007).

This hypothesis is on ownership structure and its function as an external corporate governance mechanism. It is contended that outside owners would monitor company performance and expect CEO remuneration to reflect company performance (Doucouliagos et al. 2007). Bebchuk et al. (2005) contend that the more outrage expected to be provoked at remuneration arrangements, the more unlikely directors will be to approve CEO remuneration increases due to the potential social costs such as embarrassment. According to Matolcsy and Wright (2011), substantial outside shareholders could provide monitoring and tend to favour cash-based rather than equity-based remuneration. In contrast, a study by Doucouliagos et al. (2007) finds a positive relationship between large outside shareholders and CEO remuneration. However, they argue that this might be due to the impressive performance of the banking sector over the period studied and hence, large outside shareholders were willing to reward the CEOs. Recent news indicates that shareholders in the GFC economic climate do not view an increase in executives' remuneration favourably. An example was Boral Limited where it did not obtain shareholders' approval for its executives' remuneration (Greenblat 2008). Therefore, there should be downward pressure exerted on CEO remuneration (Bebchuk and Fried 2005). The percentage of shares owned by substantial outside shareholders is used as a proxy. Substantial outside shareholders are shareholders who own blocks of the company's shares of at least five percent and who are not related to the CEO. An alternate proxy is the number of substantial outside shareholders (Pukthuanthong et al. 2004). However, the view is that the percentage of shares owned by

substantial outside shareholders is a more appropriate measure because this will indicate whether the substantial shareholders are majority shareholders and therefore have collective control of the company. Furthermore, the Australian government has introduced legislation in 2011 based on a “two strikes and re-election resolution” in which the board is to submit for re-election if more than 25 percent of shareholders vote against remuneration reports for two consecutive years (Pick, Towey and Cole 2011). Hence, the percentage of shares owned by substantial outside shareholders is a more appropriate measure.

3.4 Control variables

The following variables may have an influence on CEO remuneration:

- company size;
- industry;
- volatility of company earnings or returns; and
- market-to-book value ratio.

However, this study is not focussing on these variables. Accordingly, they are included as control variables. Another control variable that may be considered is the state of the national economy. However, a study by Niap et al. (2012b) shows that the economy, using the Australian Bureau of Statistics national economy growth rate that is the Gross Domestic Product (GDP) growth rate, which would also reflect the unemployment rate as a proxy has no significant effect on CEO remuneration. Accordingly, the national economy is excluded as a control variable.

3.4.1 Company size

Previous research tends to emphasise companies’ size effects (see for example Hackston and Milne (1996) and Campbell (2004)). And, past studies have indicated a strong association between CEO remuneration and company size not just in Australia (Merhebi et al. 2006; Productivity Commission 2009) but also in other countries such as the USA (Murphy 1985; Gabaix et al. 2008), UK (Cosh 1975) and Japan (Kaplan 1994). As stated in Liu et al. (2008), size is a surrogate for extraneous variables such as the ability to bear costs and expertise. For

example, a relatively large company can, broadly speaking, afford to hire a relatively more capable CEO since it can afford to pay higher wages. Moreover, the relatively larger companies tend to employ better performing CEOs to maximise their productivity (Jensen et al. 1976). As such, size can be a partial proxy for managerial ability (Merhebi et al. 2006). The alternate view given by the literature is that CEOs grow their companies via mergers and acquisitions, and or by other means with the intention of getting higher remuneration rather than for the best interests of their shareholders (Bliss and Rosen 2001; Grinstein and Hribar 2004). However, it is argued that shareholders would still have to benefit from the company's growth in order for CEOs to receive a higher remuneration, regardless of the CEO's intentions (Merhebi et al. 2006). Therefore, company size is included in this study as a control variable.

There are various ways to measure company size. Chalmers et al. (2004) use the natural logarithm of total assets as a proxy for the control variable size whereas the Productivity Commission (2009) uses the natural logarithm of the companies' market capitalisation. Like Doucouliagos et al. (2007) and Niap et al. (2012b), the amount of total assets is used as a measure of company size in this study.

3.4.2 Industry

Previous research, for example by Chalmers et al. (2004), has analysed companies for industry effect. The Productivity Commission (2009) discovers that remuneration levels vary substantially across industries with the highest remunerations paid in the finance, consumer and telecommunications industries; and the lowest in the utility and information technology industries. Tilt (2001) argues that testing by size and industry is a safeguard against any bias that may exist in the data. Accordingly, consideration is given to include size and industry as control variables in this study.

3.4.3 Volatility of company earnings or returns: risk

Corporate performance may to some extent be subject to the economic cycles of booms and economic downturns. Friske et al. (2001) acknowledge that companies struggle to design

optimal employment contracts that compensate appropriately for performance in a volatile market. Accordingly, risk, generally speaking, is expected to have an influence on company performance (Core et al. 1999) and is measured by the standard deviation of the return on equity over the last five years from 2005 to 2009. This approach is similar to that taken by Lee (2009). Kini and Williams (2012) use both cash flow and stock return volatility as proxies for risk. The standard deviation of shareholders returns over the last five years is not used in this study since there is a high correlation with the shareholders return variable which suggests multicollinearity. Pukthuanthong et al. (2004) argue that a company operating in a market that has higher financial volatility should be associated with increased remuneration due to risk sharing between management and shareholders. However, the view taken in this study is different. The conjecture is that shareholders of big listed companies, in contrast to small high-growth companies, tend to be risk averse and would reward executives that achieve reduced volatility in the company's ROE (Niap et al. 2012a). Accordingly, it is expected that there is a negative relationship between CEO remuneration and the volatility of company ROE.

3.4.4 Market-to-book value ratio

Market-to-book value ratio has been used in prior research as a proxy for unrecognised intangible assets (Francis et al. 1999). The market-to-book value ratio has also been used as a proxy for company growth opportunities in investment opportunity set (Chen, Elder and Hung 2010; Francis et al. 2008). Fama and French (1992) contend that market-to-book ratios have a role in explaining the cross-section of returns, and that the market-to-book value may be a proxy for financial distress (Fama and French 1996). In addition, Barnhart and Rosenstein (1998) argue that the market-to-book ratio is a better way of measuring company value. Studies such as by Barber and Lyon (1997) show that companies with high book-to-market ratios or low market-to-book ratios, referred to as value companies, tend to exhibit higher average returns than companies with low book-to-market, or high market-to-book, ratios, which are referred to as growth companies. There are two possible explanations for this value premium. Authors such as Fama and French (1995) argue that the premium is a compensation for increased financial risk. The other explanation is based on the overreaction hypothesis (Rozeff and Zaman 1998) which proposes that there is something peculiar in how investors incorporate new information into share prices in that the price of value companies'

shares tend to be below fundamental values while prices for growth companies' shares tend to be above fundamental values, and that this overreaction to past information is corrected in subsequent periods. This creates the notion that a high market-to-book ratio is a signal of good time and that a low market-to-book ratio is a signal of bad times and that these differences in prospects create dispersion in labour costs claims (Hansson 2004). Claims for remuneration increase as market value increases. Companies which are experiencing good times are therefore forced to share a larger portion of their earnings with their employees whereas low claims for remuneration in value companies which are experiencing bad times contribute to higher than expected earnings. Therefore, even if growth companies are consistently showing higher earnings, they will fall short of market expectations because of larger rents to human capital in the form of increased remuneration. Accordingly, one would expect a negative relationship between remuneration (that is, return on human capital) and company returns in terms of both earnings and share prices (Hansson 2004). Lajili et al. (2005) state that higher labour costs are significantly positively related to market values and that labour productivity does not impact positively on companies' share prices. Market value is calculated based on the share price in the stock market while the book value of net assets is determined based on the company's historical cost, or accounting-based value. It can also be calculated simply by dividing its market capitalisation, which is its share price multiplied by the number of shares; by the book value of the company's net assets.

Chapter 4. RESEARCH DESIGN AND METHODS

4.1 Introduction

This chapter sets out the philosophical stance underlying the research design, the details of the research design in terms of the models and variables, and the methods of data collection and analysis adopted in this study. Section 2 identifies the philosophical stance taken in this study. Sections 3 and 4 provide the definitions and measures of the variables contained in this research. Sections 5 and 6 describe the sampling approach and data sources. Section 7 deals with issues of screening and cleaning the collected data. Sections 8 to 10 present results of tests of normality, multicollinearity and linearity in the data. Finally, section 11 outlines and justifies the methods of data analysis to be used in the next chapter.

4.2 Philosophical stance

The philosophical stance adopted by researchers concerning assumptions about the world and the nature of knowledge, will underpin the choices of those researchers about how to conduct their research study. The two main philosophical stances or research paradigms in social science are positivist and phenomenological (Collis and Hussey 2003). These terms are also interchangeable with several alternative terms; quantitative and qualitative; objectivist and subjectivist; scientific and humanistic; and experimentalist and interpretive. From an ontological perspective, the positivist paradigm assumes that reality is objective and exists apart from the researcher. In contrast, the phenomenological paradigm assumes that reality is subjective and pluralistic as identified through different cognitions of participants under a study.

In a positivistic paradigm, research usually starts with a thorough literature review and then establishes appropriate theory followed by the construction of hypotheses. Eventually, these research hypotheses are tested by statistical inference. This deductive process also can be described as a hypo-theoretic-deductive process (Saunders, Lewis & Thornhill 2003). By comparison, in a phenomenological approach, there may be no relevant existing theory or the

researcher may not wish to be restricted by existing theory (Collis et al. 2003).

In summary, this study falls under the hypo-theoretic-deductive approach from the positivist philosophical stance. Hence, it is implicitly assumed that reality can be examined objectively and the construction of hypotheses, sample selection and statistical interpretation are essential components of the construction of a research design and the choice of research methods.

4.3 Specification of models and definitions of variables

Two models will be tested in this research. The dependent, independent and control variables for both models will be the same with the exception of the independent variable relating to measures of company performance. The measures of company performance for one model will be based on conventional company performance measures of ROE, net operating cash flow and market, or total shareholder, returns; while the measures of company performance for the second model will be based on measures of company productivity.

The dependent variable is CEO remuneration. CEO remuneration can be broken down into a fixed component and a variable, that is vary with performance, component. Since CEO total remuneration usually comprises of both a fixed component as well as a variable, that is performance-based, component, regressions are run for the following:

- fixed CEO remuneration;
- performance-based or variable CEO remuneration; and
- total CEO remuneration.

The independent variables of interest in this study are as follow:

- corporate governance structure
 - internal corporate governance mechanism
 - the ratio of independent directors on the remuneration committee; and
 - the total number of meetings attended by members of the remuneration committee;
 - external corporate governance mechanism
 - percentage of shares owned by substantial shareholders; and

- company performance measures, substituting between conventional financial performance measures and productivity measures.

The control variables for this study are as follow:

- volatility of company-specific earnings, as proxied by the standard deviation of ROE over the last five years from 2005 to 2009;
- market-to-book ratio; and
- company size.

For this study, multiple linear regressions are used. In a multiple linear regression model, the dependent variable is a function of the independent or explanatory variables plus an error term and where its parameters are linear (Wooldridge 2009). Regression analysis is a statistical technique that is used to identify causal relationships in relatively large samples of data. Researchers have used regression analysis to determine whether there is a statistically significant relationship between executive remuneration and various measures of company performance (Productivity Commission 2009). The company performance measures used may include accounting measures (such as return on equity, profit or sales) and market based measures (such as share price and or total shareholder return).

Accordingly, a generic linear model of the relationship between the various measures of remuneration and the variables that are hypothesised to be related to remuneration is given as follows:

$$CEOREM_{i,t} = \alpha + \beta_1 CEOREP_{i,t} + \beta_2 INDEPRC_{i,t} + \beta_3 RCATTE_{i,t} + \beta_4 SUBOWN_{i,t} + \beta_5 VOLATIL_{i,t} + \beta_6 MKTBK_{i,t} + \beta_7 COSIZE_{i,t} + \beta_8 COPERF_{i,t} + \epsilon_{i,t}$$

Where:

CEOREM = a measure of the CEO's remuneration;

CEOREP = CEO professional reputation as measured by the reputation index;

INDEPRC = the ratio of independent board members to total board members on the remuneration committee;

RCATTE = the total number of meetings attended by all members of the remuneration committee;

COPERF = the accounting-based and market-based measures as well as productivity measures of the company performance. This variable is different for model A and for model B as discussed below;

SUBOWN = a measure of outsiders who own at least 5% of shares;

VOLATIL = the standard deviation of ROE over the last five years from 2005 to 2009;

MKTBK = market-to-book ratio;

COSIZE = total assets; and

ε = error term.

Three measures of CEO remuneration, CEOREM, are used for the purpose of this study as follow:

FIXED = the dollar amount of CEO fixed remuneration which includes wages, superannuation, paid annual leave, and non-monetary benefits such as cars, and free or subsidised goods or services;

PERFORM = the value of all performance-related, that is variable, components of CEO remuneration such as short-term incentives or bonus, and the value of shares-related and options-related remuneration which is variable by nature; and

TOTAL = the dollar amount of total remuneration which is the sum of FIXED and PERFORM.

Initially, two measures of volatility are considered as follow:

- VOLATIL = the standard deviation of ROE over the last five years from 2005 to 2009; and
- SDMKT = the standard deviation of market returns over the last five years from 2005 to 2009.

However, the correlation of 0.738 between MKTRTN, market returns, and SDMKT, the standard deviation of market returns over the last five years from 2005 to 2009, is deemed too high (refer Table 5.5). Hence, SDMKT is excluded from the final regression model.

Subscript i denotes the company while subscript t denotes the year and $t-1$ denotes the previous year.

One-year lags are taken into consideration since the CEO's remuneration might have been based on the prior year's and or the current year's performance (Doucouliagos et al. 2007). A review of the literature indicates that lagged company performance measures are incorporated to capture the possible effects of historical performance on the structure and level of CEO remuneration (Merhebi et al. 2006; Productivity Commission 2009). According to Merhebi et al. (2006), prior research shows that any further lagged variables are insignificant (Jensen et al. 1990; Joskow and Rose 1994; Murphy 1999).

The multiple linear regression model mentioned above is a generic model for this study and forms the basis for two models which are referred to in this study as Model A and Model B.

Model A: conventional company financial performance measures

In Model A, the variable COPERF represents the following (alternative) variables which represent conventional company financial performance measures, collectively represented by FINPERF:

ROE_t = Return on Equity;

ROE_{t-1} = ROE lag one year;

CASHFL_t = Net operating cash flow;

CASHFL_{t-1} = Net operating cash flow lag one year;

MKTRTN_t = Market or total shareholders return; and

MKTRTN_{t-1} = Market return lag one year.

Accordingly, the following six regressions are run:

For the current year conventional company financial performance measures:

$$(1) \text{TOTAL}_{i,t} = \alpha + \beta_1\text{CEOREP}_{i,t} + \beta_2\text{INDEPRC}_{i,t} + \beta_3\text{RCATTE}_{i,t} + \beta_4\text{SUBOWN}_{i,t} + \beta_5\text{VOLATIL}_{i,t} + \beta_6\text{MKTBK}_{i,t} + \beta_7\text{COSIZE}_{i,t} + \beta_8\text{ROE}_{i,t} + \beta_9\text{CASHFL}_{i,t} + \beta_{10}\text{MKTRTN}_{i,t} + \epsilon_{i,t} \quad (\text{A.1})$$

$$(2) \text{FIXED}_{i,t} = \alpha + \beta_1\text{CEOREP}_{i,t} + \beta_2\text{INDEPRC}_{i,t} + \beta_3\text{RCATTE}_{i,t} + \beta_4\text{SUBOWN}_{i,t} + \beta_5\text{VOLATIL}_{i,t} + \beta_6\text{MKTBK}_{i,t} + \beta_7\text{COSIZE}_{i,t} + \beta_8\text{ROE}_{i,t} + \beta_9\text{CASHFL}_{i,t} + \beta_{10}\text{MKTRTN}_{i,t} + \epsilon_{i,t} \quad (\text{A.3})$$

$$(3) \text{PERFORM}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{ROE}_{i,t} + \beta_9 \text{CASHFL}_{i,t} + \beta_{10} \text{MKTRTN}_{i,t} + \epsilon_{i,t} \quad (\text{A.5})$$

For lag year conventional company financial performance measures:

$$(4) \text{TOTAL}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{ROE}_{i,t-1} + \beta_9 \text{CASHFL}_{i,t-1} + \beta_{10} \text{MKTRTN}_{i,t-1} + \epsilon_{i,t} \quad (\text{A.2})$$

$$(5) \text{FIXED}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{ROE}_{i,t-1} + \beta_9 \text{CASHFL}_{i,t-1} + \beta_{10} \text{MKTRTN}_{i,t-1} + \epsilon_{i,t} \quad (\text{A.4})$$

$$(6) \text{PERFORM}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{ROE}_{i,t-1} + \beta_9 \text{CASHFL}_{i,t-1} + \beta_{10} \text{MKTRTN}_{i,t-1} + \epsilon_{i,t} \quad (\text{A.6})$$

Model B: productivity measures as measures of company performance

In Model B, the variable COPERF represents company productivity measures, both partial and multifactor (or total) productivity, as follow:

- PARTIAL_t = labour, structural and physical productivity in the current year
- MULTI_t = total productivity in the current year
- PARTIAL_{t-1} = labour, structural and physical productivity lagged one year
- MULTI_{t-1} = total productivity lagged one year

Partial productivity PARTIAL comprise of the following:

- LABOR = labour productivity;
- STRUC = structural productivity; and
- PHYSC = physical capital productivity.

One-year lags are taken into consideration since the CEO's remuneration might have been based on the prior year's performance (Doucouliagos et al 2007). In addition, lagged

productivity measures are used as an indication of whether productivity drives remuneration; and current year productivity measures to investigate if it is the other way around, that is remuneration drives productivity.

For the current year company PARTIAL productivity measures:

$$(7) \text{TOTAL}_{i,t} = \alpha + \beta 1 \text{CEOREP}_{i,t} + \beta 2 \text{INDEPRC}_{i,t} + \beta 3 \text{RCATTE}_{i,t} + \beta 4 \text{SUBOWN}_{i,t} + \beta 5 \text{VOLATIL}_{i,t} + \beta 6 \text{MKTBK}_{i,t} + \beta 7 \text{COSIZE}_{i,t} + \beta 8 \text{LABOR}_{i,t} + \beta 9 \text{STRUC}_{i,t} + \beta 10 \text{PHYSC}_{i,t} + \epsilon_{i,t} \quad (\text{B.1})$$

$$(8) \text{FIXED}_{i,t} = \alpha + \beta 1 \text{CEOREP}_{i,t} + \beta 2 \text{INDEPRC}_{i,t} + \beta 3 \text{RCATTE}_{i,t} + \beta 4 \text{SUBOWN}_{i,t} + \beta 5 \text{VOLATIL}_{i,t} + \beta 6 \text{MKTBK}_{i,t} + \beta 7 \text{COSIZE}_{i,t} + \beta 8 \text{LABOR}_{i,t} + \beta 9 \text{STRUC}_{i,t} + \beta 10 \text{PHYSC}_{i,t} + \epsilon_{i,t} \quad (\text{B.5})$$

$$(9) \text{PERFORM}_{i,t} = \alpha + \beta 1 \text{CEOREP}_{i,t} + \beta 2 \text{INDEPRC}_{i,t} + \beta 3 \text{RCATTE}_{i,t} + \beta 4 \text{SUBOWN}_{i,t} + \beta 5 \text{VOLATIL}_{i,t} + \beta 6 \text{MKTBK}_{i,t} + \beta 7 \text{COSIZE}_{i,t} + \beta 8 \text{LABOR}_{i,t} + \beta 9 \text{STRUC}_{i,t} + \beta 10 \text{PHYSC}_{i,t} + \epsilon_{i,t} \quad (\text{B.9})$$

For lag year company PARTIAL productivity measures:

$$(10) \text{TOTAL}_{i,t} = \alpha + \beta 1 \text{CEOREP}_{i,t} + \beta 2 \text{INDEPRC}_{i,t} + \beta 3 \text{RCATTE}_{i,t} + \beta 4 \text{SUBOWN}_{i,t} + \beta 5 \text{VOLATIL}_{i,t} + \beta 6 \text{MKTBK}_{i,t} + \beta 7 \text{COSIZE}_{i,t} + \beta 8 \text{LABOR}_{i,t-1} + \beta 9 \text{STRUC}_{i,t-1} + \beta 10 \text{PHYSC}_{i,t-1} + \epsilon_{i,t} \quad (\text{B.3})$$

$$(11) \text{FIXED}_{i,t} = \alpha + \beta 1 \text{CEOREP}_{i,t} + \beta 2 \text{INDEPRC}_{i,t} + \beta 3 \text{RCATTE}_{i,t} + \beta 4 \text{SUBOWN}_{i,t} + \beta 5 \text{VOLATIL}_{i,t} + \beta 6 \text{MKTBK}_{i,t} + \beta 7 \text{COSIZE}_{i,t} + \beta 8 \text{LABOR}_{i,t-1} + \beta 9 \text{STRUC}_{i,t-1} + \beta 10 \text{PHYSC}_{i,t-1} + \epsilon_{i,t} \quad (\text{B.7})$$

$$(12) \text{PERFORM}_{i,t} = \alpha + \beta 1 \text{CEOREP}_{i,t} + \beta 2 \text{INDEPRC}_{i,t} + \beta 3 \text{RCATTE}_{i,t} + \beta 4 \text{SUBOWN}_{i,t} + \beta 5 \text{VOLATIL}_{i,t} + \beta 6 \text{MKTBK}_{i,t} + \beta 7 \text{COSIZE}_{i,t} + \beta 8 \text{LABOR}_{i,t-1} + \beta 9 \text{STRUC}_{i,t-1} + \beta 10 \text{PHYSC}_{i,t-1} + \epsilon_{i,t} \quad (\text{B.11})$$

For the current year company MULTI productivity measures:

$$(13) \text{TOTAL}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{MULTI}_{i,t} + \epsilon_{i,t} \quad (\text{B.2})$$

$$(14) \text{FIXED}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{MULTI}_{i,t} + \epsilon_{i,t} \quad (\text{B.6})$$

$$(15) \text{PERFORM}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{MULTI}_{i,t} + \epsilon_{i,t} \quad (\text{B.10})$$

For lag year company MULTI productivity measures:

$$(16) \text{TOTAL}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{MULTI}_{i,t-1} + \epsilon_{i,t} \quad (\text{B.4})$$

$$(17) \text{FIXED}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{MULTI}_{i,t-1} + \epsilon_{i,t} \quad (\text{B.8})$$

$$(18) \text{PERFORM}_{i,t} = \alpha + \beta_1 \text{CEOREP}_{i,t} + \beta_2 \text{INDEPRC}_{i,t} + \beta_3 \text{RCATTE}_{i,t} + \beta_4 \text{SUBOWN}_{i,t} + \beta_5 \text{VOLATIL}_{i,t} + \beta_6 \text{MKTBK}_{i,t} + \beta_7 \text{COSIZE}_{i,t} + \beta_8 \text{MULTI}_{i,t-1} + \epsilon_{i,t} \quad (\text{B.12})$$

Therefore, there should be 18 regressions in total for this study.

4.4 Construction of CEO professional reputation index

Measuring reputation, be it corporate reputation or personal reputation, is difficult because it is an intangible (Cravens and Oliver 2006). Although there have been studies relating to reputation, especially corporate reputation, there is no one common approach to measuring reputation (Rose and Thomsen 2004). This is because there is no common definition for reputation (Helm 2005). According to Othman et al. (2011), it is better to measure reputation based on objective measures from annual reports because this information reflects better and more reliable indicators. Therefore, this exploratory study seeks to construct a CEO professional reputation index using secondary data from annual reports, whether obtained

directly from the annual reports themselves or indirectly through databases such as FinAnalysis.

An index is a composite ordinal measure of variables or data items (Babbie 2007). An index summarises and rank-orders several specific observations or variables and represents them in a more general dimension. The terms scale and index are often used interchangeably in the literature. A scale is a type of composite measure that is composed of several variables or items too, but with an empirical or logical structure among them. In fact, there is a growing tendency to incorrectly use the term scale to refer to both scales and indexes, or vice versa. For example, Lam, Chan and Chan (2007) construct an index using Likert scales. While these two types of measures share some common characteristics, they are different (Babbie 2007). While both scales and indexes are composite measures of variables or data items, the way scores are assigned to them differ. An index is constructed simply by adding and accumulating scores assigned to the individual attributes or variables. A scale, on the other hand, is constructed by assigning scores to patterns of responses pertaining to those variables. This approach recognises that there are differences in the intensity among the attributes of the same variable. This can be illustrated by the following example (Babbie 2007):

In constructing an index of political activism, any of the following political actions taken is awarded one point:

- gave money to a political cause;
- wrote a letter to a government official;
- signed a political petition; and
- persuaded someone to change her of his voting intention.

Therefore, if someone gave money to a political cause and wrote a letter to a government official, those would get a total of two points. Another person who signed a political petition and persuaded someone to change her or his voting intention would also get two points. The conclusion would then be that both persons mentioned above have the same degree of political activism even though they had taken different actions.

Contrast this with the logic in scale construction where the political actions represent very different degrees of activism:

- voted;
- gave money to a political cause;
- worked on a political campaign; and
- ran for office.

Obviously, running for office represents a different degree of political activism compared to just voting.

Given that indexes and scales are different, reliability tests for scales such as Cronbach's alpha (Caruana 1997) are not appropriate for indexes. Reliability is a concept that is applicable to scales, as opposed to indexes, to demonstrate the extent by which measurements of individuals by different observers, or on different occasions, or by parallel or similar tests, will still yield similar results (Streiner and Norman 2005). While reliability assesses whether a test is measuring something in a reproducible manner, it does not assess whether the test is measuring what it purports to measure. This requires some form of validation. Validity refers to the degree to which the test actually measures what it is intended to do (Anastasi 1988). Essentially, there are two major approaches to assess validity (Streiner et al. 2005). The first approach is where other scales or indexes of similar attributes exist. In such a situation, the obvious approach is to apply the experimental instrument and one of the existing instruments to a sample and assess whether there is a significant correlation between the two. The second approach is used when no other scales or indexes are available. In such situations where there is no way to compare to an existing scale or index, construct validity is applicable. This involves linking the attribute that is being measured to some other attribute via a construct or hypothesis. This hypothetical construct is then tested by applying the experimental instrument to the sample. If the expected relationship can be verified, then the hypothesis and the experimental measure are valid. Conversely, if there is no relationship, this suggests that the fault may be due to the hypothesis or the experimental measure or both. Assessing construct validity is difficult since there is no one common experimental design or statistic with which to assess construct validity. The underlying theory, or hypothetical construct, is being used to develop a new, or better, instrument. Furthermore, these constructs tend to relate to more abstract variables which cannot be directly observed such as people's attitudes, unlike readily observable attributes; for example physical attributes such as height or weight. Hence,

designing a construct is an on-going task which requires subsequent new studies to validate previous studies (Streiner et al. 2005).

Babbie (2007) observes that even though social science researchers tend to use indexes more frequently than scales, there is little, if any, discussion in the literature of how to construct an index whereas literature on how to construct scales abound. He surmises that this may be due to the perception that index construction is straightforward and obvious. Helm (2005) laments the fact that the process describing the generation of underlying items is usually not published.

Constructing an index involves four main steps as follow (Babbie 2007):

- item selection;
- examination of empirical relationships;
- index scoring; and
- index validation.

The first step in constructing an index is to select possible items to make up the index. The first criterion in item selection is face validity, also known as logical validity. Face validity is a simple form of validation whereby researchers simply look at whether an item reasonably appears to measure the target variable which in this study is CEO professional reputation. As its name implies, it only means that it makes sense, without having to do a lot of explanation, that the item or instrument appears superficially to measure the target variable (Babbie 2007). It is not necessary to prove that an item actually does measure its target variable. Face validity is essential because the instrument or measure or the underlying hypothesis must make sense or appear reasonable. Proving that an instrument or measure is objectively valid via say statistical techniques is not sufficient (Anastasi 1988). The underlying theory needs to make sense. A weak theory cannot be changed into a good theory simply by econometric measures (Lafond 2008).

For this study, the following four proxies or attributes of CEO professional reputation, for which the data can be obtained from the annual reports, have been identified based on the existing literature as discussed in section 2.3.5 earlier:

- CEO education level;
- CEO professional memberships:

- CEO prior working experience; and
- CEO tenure with the company.

At face value, it seems logical that a CEO's level of education would enhance her or his professional reputation. In the absence of an intelligence quotient (IQ) test score, the public perceives academic qualifications to reflect a person's intellectual capabilities. Someone who has a doctor of philosophy (PhD) degree would be deemed to be highly intellectual since a PhD is perceived by the public as the pinnacle of academic achievement. Moreover, the labour market is likely to perceive a person with postgraduate qualifications to be motivated, hardworking, determined and ambitious, traits which may enhance that person's reputation.

In general, membership of professional bodies such as CPA (Certified Practising Accountant) Australia, the Institute of Chartered Accountants Australia, Engineers Australia or the Australian Institute of Company Directors, would require meeting certain criteria such as passing an examination and complying with that body's rules of ethics and conduct, or holding a particular position such as a company director. Non compliance and negligence in performing their jobs as professionals may result in members facing disciplinary action such as expulsion from that professional body. Furthermore, such memberships allow CEOs to build their social networks. Therefore, it makes sense that professional memberships may indicate not just a person's intellectual capabilities, but also that person's sense of professionalism and ethics which in turn would enhance that person's professional reputation.

At face value, a CEO's prior working experience and tenure as CEO indicates several things. Prior working experience and tenure suggest that that person has a working ethos, and would not have been in prison since a person cannot be in two places at the same time which indicates that that person may be ethical. Moreover, it implies that that person would have some credibility, such as a certain level of intellect and social skills and diligence, in doing the job; otherwise she or he would not have been able to keep the job or get another job. The difference between prior working experience and tenure is that working in organisations other than the current company would give that person a broader working experience since it allows comparison of different organisations' strategies, operations (of how things are done), culture et cetera; whereas tenure as CEO implies that that CEO would have an in-depth understanding of the company and the industry that it is in, as well as that that CEO is

performing on the job and delivering results for the company. Furthermore, if a CEO has prior experience in management especially as a director or CEO in another organisation, that indicates leadership, motivational and interpersonal skills, as well as personal and intellectual abilities. It also indicates that that person must have some degree of reputability to be able to job hop from that organisation to her or his current company as CEO. Likewise for a CEO who has served in that position in the current company for a number of years. And, the sum of a CEO's working years to date should, in theory, be the number of years spent working in other organisations plus the number of years spent as CEO of that company. Therefore, there is a certain level of mutually exclusive relationship between these two attributes.

Therefore, while the four attributes appear at face value to measure different dimensions of professional reputation, there are some interconnections among them.

The next criterion in constructing an index is the need for unidimensionality (Babbie 2007). That is, the index should only measure one dimension of a concept, for example religious fundamentalism, even though it might be empirically related to another dimension say political conservatism. For this study, the index only measures CEO professional reputation from the perspective of the shareholders and the labour market, not from the perspective of the media or the general public.

Items that are selected for constructing the index should also have some amount of variance. For example, an item that is intended to measure political conservatism should be able to identify a proportion of respondents as conservative and a proportion as not conservative. If the item can only identify everyone as conservative, or no one at all as a conservative, that item would not be useful in constructing an index. The following table shows that there are some variances for each of the four variables or attributes mentioned above from the data collected for this study. From the table, it is found that the highest variance between CEOs is in their level of prior work experience and their extent of professional memberships. These items are both directly associated with outside business/professional community network experiences and relationships. The somewhat less variable aspects of CEOs' backgrounds are their level of formal education and their period of current tenure with their company. This suggests a degree of stability in the current tenure and consistency in the level of education of CEOs in Australia's top listed companies.

Table 4.1 Variability of the variables that make up the CEO reputation index

Variable	Variance	Variable	Variance
CEO education level	0.575	CEO tenure	0.495
CEO professional memberships	0.754	CEO prior working experience	0.774

The next step is to examine the empirical relationships between the items that may be included in the index (Babbie 2007). If the items are empirically related, it is then reasonable to argue that each reflects the same target variable and therefore they can be included in the same index. Babbie (2007) states that there are two possible types of empirical relationships among the items: bivariate and multivariate. One such test is Pearson correlation which is designed for interval level (continuous) variables. Arguably, the index is made up of nominal (categorical) and ordinal (ranked) data. Therefore, non-parametric statistics techniques such as chi-square test and cross tabulation are preferable. Any item which has absolutely no empirical relationship to the other items may need to be excluded from the index since it is not likely to be measuring the same target variable. On the other hand, if two items are perfectly correlated to each other, then only one of the two items need to be included in the index since that item would convey all the indications that the other item would have conveyed. The correlation results need to be interpreted with care. An attribute which has an extremely low correlation with other attributes may indicate that it may not be a good measure of the target variable, or that it is probably measuring some other aspect or dimension of the target variable (Baruch 1997). Other than the guidelines stated above, there is no rule of thumb as to the strength of the relationship that is required to justify including an item in the index. Babbie (2007) admits that how the strength of the relationships is evaluated can be quite subtle and that there is no rule of thumb as to the strength of the relationship that is required to justify including an item in, or excluding an item from, the index. However, it is preferable that the correlation between the variables or measures should not be too high or too low (Anastasi 1988).

An inspectional analysis of a correlation table or matrix to assess the relationships between various variables or tests or measures can be difficult and uncertain (Anastasi 1988; Streiner et al. 2005). Therefore, it is preferable to use factor analysis techniques which are more precise statistical techniques since they can explore the factorial composition of particular variables or tests or measures, and define the common traits of those measures. What factor

analysis does is to derive factors, which are weighted combinations of all variables, from the correlation matrix (Streiner et al. 2005). Factor analysis is particularly relevant to construct validation, especially for analysing the interrelationships of behaviour-related data. In particular, exploratory factor analysis is relevant where there is no *a priori* hypothesis about the correlations among the variables and hence reliance is placed on the procedure to explore the relationships, if any, among them (Steiner et al. 2005). Factor analysis is a generic terminology that includes both factor analysis (FA) and principal components analysis (PCA) (Pallant 2007). These two approaches are similar in that they attempt to reduce the original variables to a smaller number of linear combinations of those variables that explain most of the variability in the pattern of correlations. The difference is that all the variance in the variables is used in PCA, whereas in FA, only the shared variance is analysed. PCA is preferred because it is mathematically simpler, psychometrically sound and avoids some of the problems with factor indeterminacy that tend to be associated with FA (Stevens 1996). FA is recommended if the requirement is on a theoretical solution that is not affected by unique and error variability whereas PCA is recommended if the requirement is for a simple empirical summary of the data set (Tabachnick and Fidell 2007). For this study, PCA is used, both for exploring the relationships between the variables as well as for validation of the index, for the following reasons:

- this is an exploratory study which intends to construct a CEO professional reputation index for the first time. Accordingly, a simple empirical summary of the data set is sufficient;
- PCA is commonly used in previous research which also attempt to construct indexes (for example, refer to Lam et al. 2007).

The next step in constructing an index is scoring. This then creates a single composite measure out of the several items. The desirable range of the index scores needs to be decided on. This is the primary advantage in using an index rather than single items (Babbie 2007). For example, Lam et al. (2007) construct a project success index because they are of the opinion that an index is a better indicator of the overall success level of design and build projects than the individual Key Performance Indicators (KPI) that make up the index, and makes it easier to measure and benchmark the relative success of various design and build projects. An index allows for a range of gradations in the measurement of a target variable.

Deciding on how far to the extremes an index should extend depends on the following conflicting objectives:

- ensuring a range of measurement in the index; and
- ensuring a sufficient number of cases at each grade in the index.

A compromise will have to be reached in regard to those two objectives. According to Babbie (2007), a scoring method of 0, 1, 2 or 3, which produces four index categories, should provide a useful range of variation as well as provide enough cases in each category. Alternatively, the scoring method can be 1, 2, 3 or 4.

For this study, a score range of 1 to 3 is chosen as a compromise between ensuring a range of measurement in the index and ensuring a sufficient number of cases at each grade for each of the variable that makes up the index.

CEO's level of education: 1 = diploma level or lower, 2 = bachelor's degree, 3 = post graduate qualifications.

As discussed in section 2.3.5, the level of education can be a reflection of, among others, a CEO's intellectual capability (Anastasi 1988). Therefore, a higher score is given the higher the CEO's level of education. Although the scoring can be changed to say 3 = Master's degree and 4 = PhD degree, this approach is not taken since there may not be sufficient observations in these two grades.

CEO's professional memberships: 1 = none; 2 = membership of one professional body; 3 = membership of more than one professional bodies.

Awarding a score of 1 for nil memberships may not sound plausible at first glance. However, as discussed in section 2.3.5, membership of professional bodies indicates, among other things, interpersonal skills such as a sense of ethics and social networking skills. Therefore, even if a CEO is not a member of any professional body, she or he would still have a certain degree of motivational and interpersonal skills due to upbringing, religious beliefs and or even the law, as well as from work et cetera. The score grades can be changed from 1 to 3, to 0 to 2 but this would not change the econometric results (Babbie 2007). The maximum score

is given if the CEO is a member of more than one professional body to ensure that there is a sufficient number of cases, and therefore variance, in each score grade. It is envisaged that not many CEOs would be a member of more than two professional bodies due to the costs, such as time constraint, outweighing the benefits, for example social networking, of having too many memberships. Thus, this restricts the score range to 1 to 3.

CEO's tenure with the company in the particular position: 1 = not more than one year; 2 = not more than three years; 3 = more than 3 years.

As discussed in section 2.3.5, it may take a CEO anywhere from approximately one year to three years to turn a company around. It certainly would be difficult for a CEO to turn around the company in her or his first year in office due to the learning curve. Therefore, the maximum score should be given to a CEO who has managed to stay in that position for more than three years on the rationale that the board of directors would want to retain a CEO who is performing (Francis et al. 2008).

CEO's prior working experience: 1 = had prior managerial working experience but not as a director or CEO of any company; 2 = had prior working experience as a director or CEO of a non-listed company; 3 = was a director or CEO, or both, of a listed company (listed either on the ASX or overseas).

Since not all CEOs disclose the number of years that they have worked in the annual reports, the type of prior working experience, rather than the number of years that CEOs have worked, is used. Prior working experience, especially as a CEO or director of another organisation, counts towards a CEO's professional reputation since it is envisaged that it is more difficult for an outsider to be appointed as CEO (Francis et al. 2008). If a person has a criminal record, would any prospective (corporate) employer, especially a Top 200 ASX listed company, want to employ that person? In addition, it is argued that the hurdle for being appointed as the CEO or director of a listed company is higher than that for other organisations. This is because managing listed companies tend to be complex; operating in a relatively high profile and highly regulated environment where there are many stakeholders and equity funding, generally speaking, comes from the public. For example, would a person who is the CEO of BHP have a higher reputation than the CEO of a public hospital; and would the CEO of a public hospital have a higher reputation than that of a manager of a public hospital?

The next decision to be made is the weighting to be assigned to each item. The norm, and practice, is to assign equal weighting to the items unless there are compelling reasons for differential weighting. That is, the burden of proof is on differential weighting (Babbie 2007). This approach of simply adding the scores on the individual items and leaving it at that is an approach that is commonly taken (Streiner et al. 2005). The approach taken in this study is the same that is, applying the same score range of 1 to 3 to each of the four variables to ensure consistency and then simply adding up the scores assigned to the four variables to come up with a CEO professional reputation index.

The last step in constructing an index is index validation (Babbie 2007). The basic logic of validation is that if an index provides a measure of a particular variable, then the scores on the index should arrange cases in a rank order that is similar to that of the index overall. For example, an index of political conservatism that successfully rank-orders people in terms of their relative conservatism should show that people who scored as relatively conservative on the index should also appear relatively conservative in all other indications of political orientation.

Index validation involves both internal and external validation. In internal validation, or specifically item analysis, the extent to which the index relates to, or predicts responses to, the individual items that comprise it is examined. The expectation is that each of the items in the index should reflect the same quality that the index as a whole measures (Babbie 2007).

External validation refers to the process of testing the validity of the index by examining its relationship with other presumed indicators of the same target variable. These other indicators are external to the index. In other words, they are not included in the index.

For this study, all the items which constitute CEO professional reputation, and for which data can be collected from the annual reports, have been included in the index. Accordingly, any validating item would not be a sufficient measure of CEO professional reputation. Therefore, external validation is not possible for this study since there is no other way to construct a CEO professional reputation index using variables which are based on secondary data, in particular annual reports. In addition, a review of the literature indicates that no one (else) has

attempted to construct a CEO professional reputation index and therefore, it is not possible to validate this index externally against another (similar) index.

As discussed earlier, for this study, PCA is used to gauge the empirical relationships among the variables as well as the validity of the CEO professional reputation index for want of a better statistics technique. Under Kaiser's criterion, or the eigenvalue rule, only factors where the eigenvalue is 1.0 or more are retained for further analysis (Pallant 2007). The results show that the eigenvalue for one factor exceeds 1.0. Therefore, this factor, which is presumably CEO professional reputation, is retained. This factor explains 29.3 percent of the variance. This percentage is deemed acceptable given that CEO professional reputation is based on the perceptions of shareholders and the labour market which would be difficult to capture using secondary data, namely from annual reports. Using a survey say via questionnaires may better capture people's perceptions but then this would not be as objective a measure as using secondary data. The factor loadings represent the correlation of each variable or test with the factor (Anastasi 1988). This correlation shows the factorial validity of the test or variable. There is no golden rule for what constitutes an appropriate factor loading cut-off especially for exploratory factor analysis (Muthen 2006) although the literature indicates a cut-off exceeding 0.3 (Pallant 2007) to 0.5 (Hair, Rolph and Tatham 1987; Bontis 1998) is acceptable. For this research, a cut-off of 0.3 is deemed appropriate on the basis that this is an exploratory, as opposed to confirmatory, study and represents an initial attempt to construct a CEO professional reputation index using secondary data. The results show that all four variables have factor loadings which exceed 0.3. Therefore, this suggests that all four variables are measuring CEO professional reputation index. However, given that there is, strictly speaking, no appropriate statistics technique to validate this CEO reputation index, the results for PCA are not tabulated since not much reliance can be placed on them.

Although there is no ideal econometric approach to validate indexes (Babbie 2007), particularly for an index which is constructed using secondary data, PCA is used for want of a better econometric approach. However, greater reliance should be placed on face validity to validate that this index is measuring CEO professional reputation. One problem with statistics is illustrated in a study by Doucouliagos et al. (2007) which shows conflicting results. When they use the full specification of their model (that is, include all variables), they find that CEO ownership does not appear to affect CEO remuneration. However, when they omit

certain variables, it appears that CEO ownership has a negative effect on CEO remuneration. Furthermore, as mentioned earlier, the underlying theory or rationale for constructing the CEO professional reputation index needs to make sense (Anastasi 1988). A weak theory cannot be changed into a good theory simply by econometric measures (Lafond 2008). Therefore, there should not be much reliance placed on the results of this econometric technique. It is merely meant to support the underlying rationale on how the CEO reputation index is constructed. In addition, regression analysis (refer section 6.2) shows that there is some association between CEO fixed remuneration and CEO professional reputation. This implies that the index is valid.

4.5 Sample selection and justification of sample size

The required sample size depends on the degree of accuracy required for the sample and, the extent of variation in regard to the key characteristics of the population being researched (De Vaus 2002). Accuracy can be increased, that is, the sampling error can be reduced, by increasing the sample size. This makes sense since the larger the sample size, the more closely the sample resembles the population being studied. However, beyond a certain point; the cost of increasing the sample size outweighs the extra precision that can be obtained. De Vaus (2002) argues that ultimately, the final sample size will be a compromise between accuracy, cost and access to respondents. Campbell (2004) contends that the optimal sample size for a longitudinal and cross-sectional research is usually a matter of judgement. Based on these considerations, the sample size selected is the top 200 companies as listed on the ASX. The reason for choosing the top 200 ASX listed companies is that large companies represent the greatest concentration of economic power (Child et al. 2003). Therefore, they have relatively more shareholders and employees, and also tend to attract greater media coverage (Miller 2006). In addition, the ASX Listing Rules are more onerous for these companies in that certain rules which are optional for other listed companies are mandatory for these listed larger companies (ASX 2007).

A list of the top 200 companies by market capitalisation as at 30 June 2009 as listed on the ASX is obtained from the Aspect-Huntley's Fin Analysis database. The use of data from financial databases is an acceptable practice which has been adopted by previous studies, for example Merhebi et al. (2006), Liu et al. (2008) and Lee (2009). Only companies which have

a balance date of 30 June are selected to reduce the effect of seasonality (Ho et al. 2003); as well as to ensure consistency in the time period used for this study. Companies which usually do not have CEOs or executive-style management such as superannuation funds, trusts and mutual funds are excluded (Merhebi et al. 2006). In addition, a company with missing data, namely non-compliance in regard to the disclosure of its CEO remuneration, is excluded (similar to Matolcsy et al. 2011). The sample is then extended to companies from this list which also appeared in the Top 200 in the two years prior, that is, in 2007 and 2008. This ensures consistency since the same companies are studied over the three year period, unlike in another study by Rankin (2010) where the number of companies each year differed. According to Bigley and Wiersema (2002), a three-year period provides a sufficiently long period of time for a CEO to enact a strategy of refocusing, and yet not too long that other factors may affect the study's validity. This brings the list of companies down to 83 which gives a total of 249 cases or observations for the three years sampled. This compares favourably to the 264 observations used by Campbell (2004) and the sample of 20 companies from 1990 to 1993 by Deegan and Rankin (1996). In addition, while different authors have different guidelines (Pallant 2007), the number of cases required should be more than 130 based on the formula given by Tabachnick et al. (2007) as follows:

The number of cases required for a sample is $50 + 8m$ whereby m is the number of independent variables.

Since the maximum possible number of independent variables for any one regression model in this study is ten, the required number of cases is $50 + (8 \times 10) = 130$. Therefore, this sample size is determined to be adequate for the purpose of this study.

4.6 Data sources

Data for this research are obtained from secondary sources, namely annual reports and databases.

4.6.1 Use of annual reports

Companies' annual reports, whereby the financial reports have been audited, are the preferred source of data because companies have significant editorial input into them, and they are produced regularly, are widely read and may be used to enhance the (environmental and otherwise) image of companies or to shift focus away from negative events (Deegan et al. 1996; Patten 1992; Gray, Kouhy, and Lavers 1995b, Campbell 2004). Gray, Kouhy, and Lavers (1995a) argue that the focus is on annual reports because it is rather impossible to identify all corporate communications over a lengthy period of time and therefore this raises doubts on the completeness of non-annual report data that have been collected which would then impact on the consistency of the research.

Data availability will not be an issue since the list of the ASX Top 200 companies for each year can be obtained free from the Standard & Poor's website through the ASX website. Furthermore, the annual reports themselves can be obtained free from the ASX website or from databases such as FinAnalysis and DatAnalysis which are accessible via the RMIT University library website.

4.6.2 Use of Databases

Data in regard to remuneration, the remuneration committee, and other financial and governance data are obtained from the Fin Analysis, DatAnalysis and Connect4 databases as well as from the annual reports themselves which can be found on the ASX website or the DatAnalysis and Connect4 databases. Data, particularly in regard to remuneration, are also obtained from other (related) reports referred to within the annual reports such as Proxy Statements. While different companies may have varying terminology for their top executive such as managing director, the term CEO is used throughout this study for simplicity. Likewise with the term remuneration committee even though certain companies may have used other terminology such as the human resources or personnel or compensation committee, or people and performance committee, or personnel and organisation committee, or the remuneration and succession planning committee, although the duties and responsibilities are similar (Niap et al. 2012a). In addition, regulatory requirements, which compel companies to disclose details about their executives and their remuneration, make it easier to collect data

for this study. As suggested by Clarkson et al. (2006), the most effective way of enhancing CEO remuneration disclosure is via formal regulations. In particular, section 300(10) of the Corporations Act 2001 requires that information about each director's qualifications and experience, including those of the managing director or CEO, be disclosed in the annual directors' report (AustLII 2008). This enables collection of data to build the CEO reputation index via the Director's Profile report in the DatAnalysis database. For ease of reading, the data and their sources are tabulated as follow:

Table 4.2 Types of data collected and the sources

Data	Sources of data
Existence and composition of remuneration committee such as number of independent directors	Connect4 database, annual reports
Number of attendances at remuneration committee meetings	Annual reports
Financial data such as ROE, net operating cash flow, changes in share prices, dividend yield, labour costs, intangibles, total assets	FinAnalysis database, annual reports
CEOs particulars including the name of the CEO, qualifications, professional memberships, type of prior work experience, appointment date	DatAnalysis database, annual reports
CEO remuneration, with breakdown by salary, bonus, shares-related salary, et cetera	Connect4 database, annual reports
Type of industry that each company is categorised under GICS	DatAnalysis database

4.6.3 Confidentiality and ethical considerations

Approval is not required from the RMIT University Business Human Research Ethics Subcommittee and confidentiality is not an issue since this study only uses secondary data on public listed companies which is publicly available.

4.7 Screening and preparing the data

The data need to be screened for missing data and outliers. In addition, the data need to be prepared so that the appropriate amounts are used which are stated in real terms in Australian currency.

4.7.1 Checking for outliers

The initial data screening process includes checking for outliers, that is, cases with extremely high or low scores (Pallant 2007). Cases which have a standardised residual of more than 3.3 or less than -3.3 can be defined as outliers (Tabachnick et al. 2007). In addition, for this study, cases which are more than three positive standard deviations or less than negative three standard deviations from the sample mean may be considered as outliers, depending on the reason causing them to be outliers. Using a log of CEO total remuneration, the following outliers are identified:

Table 4.3 Details in regard to outlier

Case	Standardised residuals	Log of CEO total remuneration
Flight Centre 2008	-4.411	10.12
Flight Centre 2007	-3.795	10.21

The standardised residuals are obtained by running SPSS, while the list of cases which are more than three positive standard deviations or less than negative three standard deviations from the sample mean of the log of CEO total remuneration, that is $14.556 \pm (3 \times 1.016)$, is obtained by running Stata which identifies the cases and their log of CEO total remuneration.

The CEO (who is also the founder) for this company did not receive any fixed remuneration for the years 2007 and 2008 although he did receive a fixed remuneration in 2009. This is consistent with Rankin (2010) who notes that the CEOs of some companies did not receive any salary but a combination of bonus, long term incentives and other benefits and allowances.

There are a few views on how to treat outliers. Outliers can either be deleted from the data set, or given a substitute score that is not too different from the other scores; or left in the data set if there are only a few outliers (Pallant 2007). Further investigation reveals that the CEO for Flight Centre is also the founder of the company. This suggests that the CEO is more interested in growing the company than in earning as much remuneration as possible. Therefore, the company Flight Centre is excluded from the final sample. This brings the final number of companies down to 82 over three years or 246 cases or observations.

4.7.2 Change in CEO during the year

There are several instances where there was a change in CEO during the year. Merhebi et al. (2006) control for the noise associated with CEO turnover by excluding the final year for a given CEO at a given company. Their rationale for doing so is that it reduces the risk of recording incorrectly the CEO remuneration levels for that year, and is appropriate where models with lagged corporate performance measures are used. Similar to the approach taken by Merhebi et al. (2006), this study excludes cases where there was a change in CEO during that year to reduce any noise associated with the changeover. For example, how much of the company's performance for that year should be attributed to the outgoing CEO and how much to the incoming CEO? It is not always the reason that a CEO leaves due to poor performance. It may be due to that CEO retiring or wishing to pursue other interests. Furthermore, it is difficult to know the intentions of the incoming CEO. An incoming CEO may want to drastically minimise the company's performance for that year and blame it on the previous (outgoing) CEO so that the following year's corporate performance would show a significant improvement which would then increase the incoming CEO's performance based pay such as the bonus. On the other hand, an incoming CEO may want to start on the task of improving the company's performance straightaway.

It may be interesting to compare the regression results for where there was a change in CEO during the year. Milbourn (2003) takes the approach where the person who served as CEO for more than six months in that year would be deemed to be the CEO for the year, who may not necessarily be the person who was serving as CEO at year end. But, the question then arises: what amount should be used as the CEO remuneration for the year? Annualising just one CEO's remuneration for that year (Gregory-Smith 2012) would distort the actual CEO remuneration for that year. It does not make sense to substitute actual CEO remuneration for

an annualised figure. CEO total remuneration for that year would be the sum of both CEOs actual remuneration for that year where there was a change in CEO. Therefore, this amount should be used as the CEO remuneration for that year. It can be conjectured that if the outgoing CEO had remained, the renewal contract awarded to that CEO may have been adjusted which would then match the contract for any incoming CEO. However, it would be difficult to determine how much of the company's performance for that year should be attributed to the outgoing CEO and how much to the incoming CEO. Therefore, since there would be too much noise involved which would distort the analysis, no attempt is made in this study to analyse for the effects of changes to the CEO. Excluding cases where there was a change of CEO in that year brings the total number of cases down to 225 for this study. Therefore, there are 225 cases where total CEO remuneration are disclosed in the annual reports, which can be categorised as fixed or performance-based remuneration.

4.7.3 Dealing with missing data

Where there is missing data, there are several possible actions to take, which can be categorised broadly as follow (Babbie 2007):

- if there are only a few cases, relatively speaking, with missing data, exclude them from the analysis; or
- determine if there is a justification for treating the missing data as one of the possible responses and score them accordingly.

The approach taken in this study, which is also recommended by Pallant (2007), is to exclude cases with missing data for that particular variable only but still include those cases for analysis if there are data for the other variables. Excluding those cases completely would severely, and unnecessarily, limit the sample size.

To check for missing cases involves running SPSS Statistics software and or Stata data analysis and statistical software (Stata) for descriptive statistics which includes, among other things, the total number of cases. Therefore, if there are 82 companies with data over three years from 2007 to 2009, there should be 246 cases in total. Excluding cases where there was a change in CEO in that year reduces the total number of cases by 21 to 225.

In regard to the remuneration committee, one company did not have a remuneration committee for the three years 2007 to 2009 which means that there are three cases with no data in regard to the remuneration committee-related variables. In addition, two companies did not have any independent members on the remuneration committee for the year 2007.

In regard to the productivity model, two companies did not disclose their labour costs in their annual reports for the three years 2007 to 2009 (one case had already been excluded since there was a change in CEO for that company in 2008). In addition, one company did not disclose its labour costs in its annual reports prior to 2009 while another company did not disclose in 2006.

4.7.4 Dealing with different monetary amounts

Where remuneration is expressed in foreign currencies, those amounts are converted to Australian dollars based on the average exchange rate applicable for the year which is available on the Reserve Bank of Australia (RBA) (2011) website (Niap et al. 2012a, b).

In addition, all monetary data including remuneration are adjusted for inflation to June 2005 using the Consumer Price Index (CPI) as published on the Australian Bureau of Statistics (ABS) (2011) website. This is consistent with the approach taken in other studies such as by Merhebi et al. (2006) who adjusted all monetary data to June 1990 Australian dollars, as well as adjusted nominal returns for inflation. According to Wooldridge (2009), it is important to use real wages rather than nominal wages to avoid any distortions in econometrics analysis. The base year is 2005 because the earliest set of annual data used, which is for the year 2005, is to calculate the standard deviation of ROE, VOLATIL.

4.7.5 Dealing with termination payments

Given the three-year time span, termination-related remuneration is excluded. Bebchuk et al. (2005) contend that omitting remuneration components that are substantial in amount, may understate the actual remuneration received during the year. However, Merhebi et al. (2006) argue that it is inappropriate to include termination payouts as that should be amortised over

the total period of employment. Further, they contend that inclusion of what may be excessive termination or severance payouts for poor performers may bias against finding a remuneration-performance relationship given the difficulty in making a reliable estimate of the benefit to the company of this CEO departure, unlike the cost. Accordingly, consistent with Merhebi et al. (2006), termination payments are excluded from remuneration.

4.7.6 One-year lag company performance measures

A one-year lag of company performance measures is taken into consideration for this study since the CEO's remuneration may be based on both the previous year as well as the current year's corporate performance (Doucouliagos et al 2007).

4.8 Normality check

The normality of the distribution of scores for each of the measures of the dependent variable, CEO remuneration, is assessed using skewness and kurtosis. The results (refer table 5 below) reveal that there is a high level of skewness and kurtosis in the data.

Table 4.4 Skewness and kurtosis of CEO remuneration: pre and post transformation to log

Dependent variable:	Before transformation		After transformation to log	
	Skewness	Kurtosis	Skewness	Kurtosis
CEO remuneration				
Total remuneration	3.554	21.999	-0.706	4.949
Fixed remuneration	4.999	36.473	-0.091	4.804
Performance-based remuneration	2.975	15.579	-0.790	3.671

Consequently, the dependent variable is transformed to its natural log (ln). This approach of transforming variables has been debated in the published literature (Merhebi et al. 2006; Pallant 2007) with some authors arguing that the logarithmic model is more appropriate given the skewed nature of the data (Rosen 1992; Cameron and Trivedi 2009). As with Merhebi et al. (2006), the skewness in CEO remuneration indicates that the logarithmic model is more appropriate to mitigate the effect of extreme values.

However, parameter interpretation of transformed variables requires care (Cameron et al. 2009). For non-transformed, or level, variables, a one unit change in an independent variable x means an n -number of unit change in the dependent variable y . However, for a dependent variable that has been transformed into log, a one-unit change in an independent variable x is associated with a percentage change in the dependent variable y . Therefore, the log of total remuneration does not equal the log of fixed remuneration plus the log of performance-based remuneration. Rather, the log of (fixed remuneration multiplied by performance-based remuneration) equals the log of fixed remuneration plus the log of performance-based remuneration. The following example illustrates this:

$$\text{Ln}(40) = 3.69$$

$$\text{Ln}(60) = 4.09$$

$$\text{Ln}(40+60) = \text{Ln}(100) = 4.60$$

$$\text{Ln}(40*60) = \text{Ln}(2400) = 7.78$$

This is an important consideration to keep in mind when analysing the regression results in chapter 5.

4.9 Multicollinearity check

The data is also checked for multicollinearity since linear multiple regression analyses are conducted on the panel data covering the years 2007 to 2009. Multicollinearity is tested for based on bivariate correlation (Pearson correlation) and the variance inflation factor (VIF) (Pallant 2007). The VIF computed do not exceed five which is well below the generally accepted cut-off of 10 (Pukthuanthong et al. 2004). The results are tabulated as follow:

- Table 4.5 shows the VIF for Model A which uses conventional company performance measures;
- Table 4.6 shows the VIF for Model B which uses partial productivity as measures of company performance; and
- Table 4.7 shows the VIF for Model B which uses total or multifactor productivity as measures of company performance.

Table 4.5 Collinearity statistics for Model A (financial performance measures)

Variable	VIF	Variable	VIF	Variable	VIF
CEOREP	1.084	CASHFL _t	1.120	MKTBK	1.285
INDEPRC	1.077	MKTRTN _t	3.390	COSIZE	1.539
RCATTE	1.291	VOLATIL	1.460	SDMKT	2.594
ROE _t	1.189	SUBOWN	1.157		

Table 4.6 Collinearity statistics for Model B (using partial productivity measures)

Variable	VIF	Variable	VIF	Variable	VIF
CEOREP	1.130	STRUC _t	2.355	MKTBK	1.271
INDEPRC	1.087	PHYSC _t	1.174	COSIZE	1.156
RCATTE	1.194	VOLATIL	1.361		
LABOR _t	2.393	SUBOWN	1.123		

Table 4.7 Collinearity statistics for Model B (using total productivity measures)

Variable	VIF	Variable	VIF	Variable	VIF
CEOREP	1.074	MULTI _t	1.187	MKTBK	1.341
INDEPRC	1.080	VOLATIL	1.329	COSIZE	1.169
RCATTE	1.177	SUBOWN	1.106		

Only VIF for current year company performance measures are calculated since it is inconceivable that the VIF results for lagged company performance measures would differ substantially.

4.10 Linearity

To check that the relationships between the dependent variables and the independent variables are linear, scatter plots of residuals for dependent variables, and normal P-P plots of regression standardised residuals (refer Appendix A for an example) are inspected using SPSS (Pallant 2007). These do not indicate any non-linear relationships.

4.11 Methods of data analysis

Consideration needs to be given as to which method is more appropriate for this study: pooled data analysis or panel data analysis, as follows.

4.11.1 Pooled versus panel regression analysis

A panel data set comprises of a time series of each cross-sectional unit or member in the data set (Wooldridge 2009). Usually, panel data, also known as longitudinal data, are data that comprise of repeated measurements on the same individual units, such as individuals or companies, at different points in time (Cameron et al. 2009). An example of panel data would be wage, education and employment history for a set of individuals over a five-year period. Or, financial data for the same set of companies over a ten-year period. The key difference between panel data and pooled cross section data is that panel data are collected on the same cross-sectional units, such as individuals or companies, over a specific time period. In other words, collecting panel data involve attempting to follow the same individuals or companies et al. across time. When performing econometric analysis of panel data, it is incorrect to assume that the observations are independently distributed across time. For example, unobserved factors such as ability that affects an individual's salary in 2007 would also affect that individual's salary in 2008. Regressions can then capture variations over time, as well as variations over units, similar to regression on cross-section data. Panel data analysis methods are more complex than cross-section data analysis methods because the standard errors of panel data estimators need to be adjusted for each additional time period of data since they are not independent of previous periods.

Panel data analysis is preferable to pooled data analysis because using a simple regression equation will most probably mean that there would be explanatory variables that are omitted such as managerial skill and employee ability (Wooldridge 2009). These omitted variables can be referred to as the unobserved variables. One possible solution is to include as many variables in the regression model as possible such as education levels, age distribution and gender distribution. However, it would be extremely difficult to control for so many variables. Accordingly, an alternative way is to view the unobserved variables, known alternatively as the unobserved effect, as being of two types: those that vary over time and those that are constant. The regression model for panel data would then have a variable that captures all unobserved, time-constant factors such as geographical features and race that affect the

dependent variable. Studies which do not have repeated observations of companies over time cannot control for this time-invariant unobserved effect (Murphy 1985). There is also a time-varying error, also known as the idiosyncratic error, which represents unobserved factors or variables such as work experience that change over time. The drawback with using pooled regression analysis is that this model does not take the omitted variables into account. Therefore, it is important to use panel data analysis rather than pooled data analysis for panel data sets. A key advantage of panel data analysis over pooled data analysis is that it allows for the unobserved variable to be correlated with the explanatory variables (Wooldridge 2009).

The panel data in this research are balanced, meaning that all individual units are observed in all time periods. However, panel data analysis methods can be applied irrespective of whether the panel data are balanced or unbalanced. The fundamental distinction in panel data analysis is deciding whether to use fixed-effects or random effects models (Wooldridge 2009).

4.11.2 Fixed effects versus random effects panel data analysis (Hausman and Likelihood Ratio tests)

There are two types of regressions for panel data analysis: fixed effects (FE) method and random effects (RE) method. A key advantage of the fixed effects method is that it allows for arbitrary correlation between the unobserved variable and the explanatory variables. However, time-constant variables such as education are differenced away when doing a year –by-year comparison. Accordingly, the fixed effects method suffers from bias due to the omission of the time-constant or time-invariant variable. However, current econometric analysis practice dictates that in all instances where the unobserved variable or effect is correlated with any explanatory variable(s), the fixed effects method should be used (Wooldridge 2009).

The random effects model is preferred when the unobserved variable, which may include ability and family background, is not correlated with all the explanatory variables, regardless of whether the explanatory variables are constant over time or not such as education. One advantage of the random effects method over the fixed effects method is that the random effects method allows for explanatory variables that are constant over time, or are time-invariant. This is because under the random effects method, the assumption is that the

unobserved variable is uncorrelated with all the explanatory variables regardless of whether the explanatory variables are constant over time. Therefore, we can include time-invariant variables such as education even if those variables do not change over time. However, this detracts to some extent the main reason for using panel data analysis which is to allow the unobserved variable to correlate with the explanatory variables. Therefore, when using the random effects method, it is common to try to include as many time-constant explanatory variables as possible. The random effects method is still superior to pooled regression analysis because the former is generally more efficient. Typically in econometrics, there is a trade-off between efficiency and robustness (Wooldridge 2009). An efficient statistics requires fewer samples whereas a robust statistic is resistant to errors in the results that may be caused by deviations from the assumptions on that statistic such as normality. In other words, if the assumptions are reasonably met, the robust estimator will still have a reasonable efficiency and relatively small bias. In addition, the robust estimator will be asymptotically unbiased, that is, having a bias tending towards nil as the sample size increases towards infinity.

The procedure for performing panel data analysis using Stata is as follows:

The Hausman test is performed to decide whether to use the results from fixed effect (FE) or random effect (RE) regressions for the panel data analysis (Wooldridge 2002; Cameron et al. 2009). However, in Stata, it is necessary to run both the FE and RE regressions first to enable Stata to calculate the Hausman test. If the probability that the chi-square is more than the significance level of 0.05, then results from the RE regression should be used for panel data analysis. Conversely, if the probability that the chi-square is less than or equal to the significance level of 0.05, then results from the FE regression should be used for panel data analysis.

The next step is to test for heteroskedasticity using the LR (likelihood ratio) test (Cameron et al. 2009; Wiggins 2003) which can be done in Stata. If there is heteroskedasticity, an FE or RE robust regression, which would have been decided based on the result of the Hausman test run earlier, needs to be run and the results from this regression are used for panel data analysis. These robust regressions are robust to heteroskedasticity as well as autocorrelation, or serial correlation (Cameron et al. 2009; Wooldridge 2002; Wooldridge 2009; Drucker

2009). That is, robust regressions obtain heteroskedastic-consistent standard errors (Cameron et al. 2009).

The panel data set needs to be tested for heteroskedasticity, which is the opposite of homoskedasticity, because of an assumption of multiple regressions that there is homoskedasticity in the data (Wooldridge 2009). That is, the variance of the unobservable error, which is conditional on the independent variables, should be constant. If this variance is not constant, then it is likely that there is heteroskedasticity. An example of the presence of heteroskedasticity is if the variance of the unobserved factors that affect savings increases with income, in a savings equation. Under the homoskedasticity assumption, the variance of those unobserved factors should remain constant. This problem of heteroskedasticity cannot be resolved merely by increasing the sample size. However, multiple regressions can still be calculated by using heteroskedasticity-robust procedures regardless of whether heteroskedasticity is present in the population. These robust regressions are robust, that is consistent, even in the presence of heteroskedasticity and autocorrelation (Drucker 2009; Wooldridge 2009). In other words, these robust regressions can overcome the problems of heteroskedasticity and autocorrelation in the data. Statistics and econometrics software packages such as Stata can compute robust regressions, that is, regressions with fully robust standard errors, for panel data which can resolve the problems of heteroskedasticity and autocorrelation. Autocorrelation, or serial correlation, in a panel data exists when there is correlation between the errors in different time periods. The question then arises: if robust regressions are valid more often than the ordinary multiple regressions, why use ordinary multiple regressions at all? The reason is that if the homoskedasticity assumption holds and the errors are normally distributed, then the usual t statistics have exact t distributions in which case ordinary multiple regressions can be used. Put simply, there is a trade-off between efficiency and robustness (Wooldridge 2009).

Changing the units of measurement of the independent variables would not affect the goodness-of-fit of the regression model. For example, the amount of variation in wages as explained by the return on equity, would not depend on whether the wages are measured in dollars or millions of dollars, or whether ROE is measured in decimals or percentage (Wooldridge 2009). The R-squared of the regression is sometimes referred to as the coefficient of determination (Wooldridge 2009). This is the ratio of the variation in the dependent variable y that is explained by the explanatory or independent variables x ,

compared to the total variation. It gives an indication of the goodness-of-fit or how well the regression line fits the data.

Chapter 5. RESULTS AND ANALYSIS

5.1 Introduction

The data analysis and results for this study are presented and discussed in this chapter. First, descriptive statistics provide a profile of the dependent and independent variables. Then, the results of 18 panel regressions are presented. These regressions are based on the 18 models as specified in Chapter 4, section 4.3. Finally a discussion is given of these regression results as tests of the hypotheses developed in Chapter 3, section 3.3.

5.2 Descriptive statistics

5.2.1 Descriptives for the key variables

Table 5.1 provides a summary of the descriptive statistics for the variables in this study. CEO remuneration is shown in real terms by dollar amount rather than by log since this represents the actual situation.

Table 5.1 Descriptive statistics of dependent and independent variables

Variable	N	Mean	SD	Variable	N	Mean	SD
<i>CEO Remuneration and Reputation</i>				<i>Company Productivity:</i>			
TOTAL (\$'m)	225	3.337	3.632	LABOR _t	218	9.268	36.716
FIXED (\$'m)	225	1.502	1.560	LABOR _{t-1}	216	10.129	38.296
PERFORM(\$'m)	205	2.014	2.420	STRUC _t	218	5.652	27.345
CEOREP	225	9.182	1.650	STRUC _{t-1}	216	6.886	30.442
<i>Remuneration Committee:</i>				PHYSC _t	218	0.423	0.432
INDEPRC	222	0.940	0.152	PHYSC _{t-1}	216	0.416	0.407
RCATTE	222	13.640	8.987	MULTI _t	218	0.221	0.167
<i>Company Financial Performance:</i>				MULTI _{t-1}	216	0.223	0.165
ROE _t	225	0.160	0.224	<i>Control Variables:</i>			

ROE _{t-1}	225	0.168	0.224	VOLATIL	225	0.092	0.122
CASHFL _t (\$'m)	225	58.000	20.500	SUBOWN (%)	186	29.173	16.067
CASHFL _{t-1} (\$'m)	225	54.800	17.800	MKTBK	225	3.924	6.385
MKTRTN _t (\$/share)	225	49.869	59.630	COSIZE (\$'m)	225	13,700.000	54,900.000
MKTRTN _{t-1} (\$/share)	225	51.972	66.011				

Notes: N = Number of cases or observations; SD = Standard deviation; \$'m = \$ million; all monetary data are expressed in real terms.

There should ideally be 225 cases for every variable. But, as discussed in section 4.7.3, there are missing data for a few of the variables and therefore the number of cases is less than 225 for those variables. As discussed in Chapter 4, there were a few non-compliant companies found in the sample. First, not all companies in the ASX Top 200 list follow the ASX recommendation in regard to corporate governance. One company did not have a remuneration committee for the three years 2007 to 2009 being studied. In addition, two companies did not have any independent members on the remuneration committee for the year 2007. Second, two companies did not disclose their labour costs in their annual reports for the three years 2007 to 2009 (one case was excluded from the sample because there was a change in CEO in 2008) while one company did not disclose its labour costs in its annual reports prior to 2009 while another company did not disclose in 2006.

Tables 5.1 and 5.2 provide descriptive statistics on CEO remuneration for the 3-year period from 2007 to 2009. Table 5.1 reveals that the average CEO total remuneration is \$3.337 million per annum, which is about 100 times the average Australian worker's wage of approximately \$32,330 in May 2009 (ABS 2013). Hence, this would explain the media and public interest in CEO remuneration. Further, Table 5.1 shows that CEOs receive a higher proportion of their total remuneration as performance-based (mean = \$2.014m) than as fixed remuneration ((mean = \$1.502m). This indicates that performance-based remuneration is 25% higher than fixed remuneration, even though this is recorded during the GFC period of company performance downturn. Presumably performance-based remuneration is substantially greater during favourable economic periods. Additionally, it can be seen in Table 5.2 below that there was a shift towards fixed remuneration from 2007 to 2009 during a

period of economic downturn. This is consistent with Rankin's (2010) observation that there is a shift in CEO remuneration from risky equity-based remuneration towards less risky cash-based remuneration. This implies that CEOs prefer to be paid a fixed salary rather than a performance-based salary during times of financial uncertainty.

Table 5.2 CEO fixed remuneration as a percentage of total remuneration

Description / Year	2007	2008	2009	Overall
CEO fixed remuneration as a percentage of total remuneration	44.99	42.03	48.22	45.02
CEO performance-based remuneration as a percentage of total remuneration	55.01	57.97	51.78	54.98
Total	100.00	100.00	100.00	100.00

While Table 5.2 shows that on average more than 50% of CEO remuneration is performance-based, it should be noted that not all companies provide their CEO with performance-based remuneration. Of the 82 companies in this study, only 66 companies paid performance-based remuneration to their CEOs in 2009 (compared to 66 in 2008 and 73 in 2007). In addition, not all companies provide share-based remuneration which may be due to the costs involved in the implementation of share based remuneration schemes in Australia where such schemes must be presented and approved at the shareholders' annual general meeting (Matolcsy et al. 2011).

Returning to Table 5.1, there are other noteworthy profiles of variables. First, there is a high proportion of independent directors on the remuneration committee (94%). Also, the remuneration committee is relatively diligent in attendance of meetings (mean = 13 aggregate meeting attendances over 3 years). Second, the ROE and MKTRTN of companies has been falling slightly (that is, t values are lower than t-1 values), while the CASHFL has been rising slightly (that is, t values are higher than t-1 values). Third, average labour productivity (LABOUR) (as a ratio of gross value-added to labour costs) is much higher than average physical productivity (PHYSIC) (as a ratio of gross value-added to physical assets). Interestingly, between 2007 and 2009 there was a decline in company productivity in terms of both labour productivity (8.5% fall) and structural productivity (17.9% fall), but a slight rise in physical productivity (1.7% rise). This infers that, on average, when company gross

value-added fell from 2007 to 2009, expenditure of physical assets was most severely cut, followed by labour cost cuts, and least rapid or severe cuts to structural (intangibles) capital.

5.2.2 Industry comparisons for CEO remuneration

The 225 cases are classified by industry sector based on the GICS code (that is, the Global Industry Classification Standard developed by Standard and Poor's/Morgan Stanley Capital International). Table 5.3 lists the number of cases in each GICS industry sector for this study.

Table 5.3 Number of observations by industry sector

Industry	GICS code	N	Industry	GICS code	N
Energy	10	26	Health care	35	23
Materials	15	41	Financials	40	39
Industrials	20	38	Information Technology	45	6
Consumer discretionary	25	32	Telecommunication Services	50	5
Consumer staples	30	10	Utilities	55	5

To investigate whether there is a significant industry difference in CEO remuneration, one-way between-groups analysis of variance (ANOVA) is conducted to compare the variance between the industry groups. The results, obtained from Stata, relating to CEO remuneration show that the significance value (Probability of F) is 0.181, indicating there is no significant difference in variance of CEO total remuneration between the industry groups.

However, this one-way ANOVA does not test for any differences between individual pairs of industry groups. Therefore, a post-hoc analysis is conducted to identify any differences between pairs of industry groups. The Scheffe test is used since this is one of the most commonly used post-hoc test (Pallant 2007). The results in Table 5.4 show that there is no statistically significant difference between the pairs of industry groups since they are all well in excess of 0.05, with most showing 1.000. Given these non-significant results, it can be concluded that there is no statistically significant difference between the industry groups and that there is no industry effect on CEO remuneration. Therefore, there is no necessity to control for industry effect by including dummy variables for the industry groups in the regression models.

Table 5.4 Comparison of CEO remuneration by industry (Scheffe): significance levels

GICS code	10	15	20	25	30	35	40	45	50
15	1.000								
20	0.986	0.981							
25	0.985	0.979	1.000						
30	0.999	0.999	1.000	1.000					
35	1.000	1.000	0.964	0.961	0.997				
40	1.000	1.000	1.000	1.000	1.000	0.999			
45	1.000	1.000	0.995	0.995	0.999	1.000	1.000		
50	0.740	0.732	0.966	0.974	0.988	0.677	0.884	0.814	
55	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.989

Note: a description of the GICS sectors for the relevant GICS codes is as follows: 10 = Energy, 15 = Materials, 20 = Industrials, 25 = Consumer discretionary, 30 = Consumer staples, 35 = Health care, 40 = Financials, 45 = Information technology, 50 = Telecommunication services, 55 = Utilities

5.3 Bi-variate correlation

As a preliminary indication of the hypothesised relationships between CEO remuneration and the various independent variables, as well as relationships between the independent variables themselves, Pearson correlations are computed. Tables 5.5, 5.6 and 5.7 reveal that the bivariate correlations between the independent variables themselves do not exceed the suggested cut-off correlation coefficient of 0.7 (Pallant 2007) but for two exceptions. The first exception is the correlation between SDMKT (that is, the standard deviation of market returns) and MKTRTN (market returns) which has $r = 0.733$. However, there already is a measure of risk in the models which is VOLATIL (that is, the standard deviation of ROE over the last five years). In addition, the variable total shareholder returns is considered a more useful measure since it is a market-based measure of company performance. Accordingly, the variable SDMKT is removed from the regression models to avoid creating possible multicollinearity.

There is also a high correlation of $r = 0.753$ between LABOR (labour productivity) and STRUCT (structural productivity). However, it is the concepts that are important in the specification of the models, not the statistics (Lafond 2008). As discussed in section 2.5.4, although the formula for calculating structural productivity would lead to a high correlation with labour productivity, this formula is acceptable in the literature.

Turning to the correlations between the dependent variable, TOTAL (total CEO remuneration) and the independent variables in Tables 5.5 and 5.6, there are significant results for the following independent variables: CEOREP, VOLATIL, CASHFL, MKTRTN, LABOR, STRUC and RCATTE. This preliminary evidence suggests that CEO remuneration could be affected by the concepts of CEO reputation, company financial performance (in terms of volatility of ROE, size of cashflow and level of market return), company productivity (in terms of labour and structural productivity) and governance (in terms of the diligence of the remuneration committee).

However, conclusions are not drawn from these bi-variate correlation results because they do not account for the joint effects of the independent variables or the time series nature of the data. Multivariate analysis, using panel data regression analysis, can provide a much more rigorous method for testing the hypotheses in this study.

Table 5.5 Pearson (pair-wise) correlation results for the variables in Model A (the company financial performance model)

	TOTAL	CEOREP	INDEPRC	ROE	VOLATIL	COSIZE	CASHFL	MKTRTN	SDMKT	SUBOWN	MKTBK	RCATTE
TOTAL	1.000											
CEOREP	0.149	1.000										
INDEPRC	0.052	0.198	1.000									
ROE	0.013	-0.068	-0.173	1.000								
VOLATIL	-0.317	0.066	-0.091	0.210	1.000							
COSIZE	0.269	0.065	0.070	0.001	-0.091	1.000						
CASHFL	0.354	0.063	0.069	0.093	-0.080	0.182	1.000					
MKTRTN	0.244	0.144	0.075	0.216	-0.148	0.436	0.136	1.000				
SDMKT	0.090	0.161	0.088	0.186	-0.001	0.110	0.058	0.733	1.000			
SUBOWN	-0.056	-0.082	-0.049	-0.021	0.133	-0.114	0.078	-0.193	-0.161	1.000		
MKTBK	-0.043	0.038	-0.092	0.012	0.391	-0.066	0.002	0.048	0.050	-0.028	1.000	
RCATTE	0.388	-0.038	0.116	0.001	-0.248	0.295	0.263	0.264	0.207	-0.007	-0.179	1.000

Table 5.6 Pearson (pair-wise) correlation results for the variables in Model B (the company partial productivity model)

	TOTAL	CEOREP	INDEPRC	VOLATIL	COSIZE	LABOR	STRUC	PHYSC	SUBOWN	MKTBK	RCATTE
TOTAL	1.000										
CEOREP	0.149	1.000									
INDEPRC	0.052	0.198	1.000								
VOLATIL	-0.317	0.066	-0.091	1.000							
COSIZE	0.269	0.065	0.070	-0.090	1.000						
LABOR	-0.162	-0.019	0.035	0.139	-0.033	1.000					
STRUC	-0.146	-0.028	0.042	0.042	-0.032	0.753	1.000				
PHYSC	0.070	-0.278	-0.075	-0.102	-0.149	-0.048	-0.073	1.000			
SUBOWN	-0.056	-0.082	-0.049	0.133	-0.114	-0.082	-0.063	0.006	1.000		
MKTBK	-0.043	0.038	-0.092	0.391	-0.066	0.008	-0.032	0.111	-0.028	1.000	
RCATTE	0.388	-0.038	0.116	-0.248	0.295	-0.131	-0.107	-0.028	-0.007	-0.179	1.000

Table 5.7 Pearson (pair-wise) correlation results for the variables in Model B (the company total productivity model)

	TOTAL	CEOREP	INDEPRC	VOLATIL	COSIZE	MULTI	SUBOWN	MKTBK	RCATTE
TOTAL	1.000								
CEOREP	0.149	1.000							
INDEPRC	0.052	0.198	1.000						
VOLATIL	-0.317	0.066	-0.091	1.000					
COSIZE	0.269	0.065	0.070	-0.090	1.000				
MULTI	0.186	-0.185	-0.151	-0.075	-0.174	1.000			
SUBOWN	-0.056	-0.082	-0.049	0.133	-0.114	0.037	1.000		
MKTBK	-0.043	0.038	-0.092	0.391	-0.066	0.219	-0.028	1.000	
RCATTE	0.388	-0.038	0.116	-0.248	0.295	0.015	-0.007	-0.179	1.000

5.4 Panel regression analysis results

5.4.1 Introduction

The results of 18 panel regressions are presented in Tables 5.8 to 5.11 in this section. All 18 regressions are tests of determinants of CEO remuneration, being total, fixed or performance-based remuneration. These regressions are grouped into Model A company financial performance regressions, and Model B company productivity regressions. Both models A and B contain the same independent variables relating to CEO reputation, remuneration committee and ownership structure characteristics as well as the same control variables.

Specifically, the results are presented in the following tables:

- Table 5.8 shows the regression results for Model A where company financial performance measures for the current year and lagged one year are regressed on CEO total remuneration, fixed remuneration and performance-based remuneration, respectively (six regressions);
- Table 5.9 shows the regression results for Model B where company productivity measures for the current year and lagged one year are regressed on CEO total remuneration only (four regressions);
- Table 5.10 shows the regression results for Model B where company productivity measures for the current year and lagged one year are regressed on CEO fixed remuneration only (four regressions);
- Table 5.11 shows the regression results for Model B where company productivity measures for the current year and lagged one year are regressed on CEO performance-based remuneration only (four regressions).

5.4.2 Results for Model A – financial performance, reputation and governance effects on CEO remuneration

Table 5.8 shows that the explanatory power of Model A, based on R^2 , ranges from 44.5% to 13.0%. The models with the strongest explanatory powers are model (A.1): CEO total

remuneration explained by current year financial performance and other variables; and model (A.3): CEO fixed remuneration also explained by current year financial performance and other variables.

Highlights of significant relationships, broadly speaking, in these six regressions in Table 5.8 are as follow:

- CEO professional reputation positively and significantly affects CEO fixed remuneration, not performance-based remuneration;
- a measure of company financial performance that significantly affects CEO remuneration is net operating cash flow in the current and prior year; and
- of the control variables, company size and company growth are each significantly positively related to CEO remuneration while volatility is significantly negatively related.

Table 5.8 Panel regression results for Model A – financial performance, reputation and governance effects on CEO remuneration

Models	(A.1)	(A.2)	(A.3)	(A.4)	(A.5)	(A.6)
<i>Company financial performance and other independent variables:</i>	<i>Dependent variables: categories of CEO remuneration</i>					
	TOTAL	TOTAL	FIXED	FIXED	PERFORM	PERFORM
Hausman	0.056	0.002	0.060	0.000	0.6644	0.826
LR	0.000	0.000	0.000	0.000	0.000	0.000
R ²	0.424	0.216	0.445	0.130	0.130	0.210
Constant/intercept	14.102	13.277	13.314	12.620	14.403	14.283
CEOREP	0.050 0.252	0.068 0.364	0.067 0.027**	0.098 0.050**	-0.078 0.439	-0.006 0.956
INDEPRC	-0.220 0.681	-0.006 0.987	-0.224 0.585	-0.186 0.417	-0.182 0.835	-0.138 0.879
RCATTE	0.006 0.511	-0.001 0.942	0.004 0.578	-0.001 0.881	0.003 0.879	0.014 0.392
ROE _t	0.176 0.387		0.205 0.123		-0.059 0.904	
ROE _{t-1}		-0.076 0.649		-0.107 0.396		-0.054 0.935
CASHFL _t	1.32(10) ⁻¹⁰ 0.006***		1.40(10) ⁻¹⁰ 0.000***		2.34(10) ⁻¹⁰ 0.014**	

CASHFL _{t-1}		1.90(10) ⁻¹¹ 0.700		-1.97(10) ⁻¹⁰ 0.000***		2.78(10) ⁻¹⁰ 0.028**
MKTRTN _t	0.001 0.632		0.002 0.191		-0.004 0.462	
MKTRTN _{t-1}		0.007 0.153		0.007 0.022**		-0.018 0.146
VOLATIL	-2.363 0.001***	Omit	-1.634 0.010***	Omit	-3.744 0.017**	-3.727 0.062*
SUBOWN	-0.002 0.519	-0.006 0.097*	0.002 0.453	0.001 0.941	-0.005 0.646	-0.008 0.437
MKTBK	0.021 0.000***	0.023 0.000***	-0.002 0.547	0.001 0.618	0.056 0.000***	0.049 0.008***
COSIZE	2.95(10) ⁻¹¹ 0.000***	6.89(10) ⁻¹¹ 0.021**	1.83(10) ⁻¹¹ 0.021**	5.62(10) ⁻¹¹ 0.007***	4.25(10) ⁻¹¹ 0.000***	4.03(10) ⁻¹¹ 0.000***

Notes: * = statistically significant at the 10% (weak significance); ** = 5% (moderate significance); and *** = 1% (strong significance) levels respectively. Each cell reports the coefficients in the first row and the significance level in the second row from different regressions (rounded to three decimal places).

5.4.3 Results for Model B – productivity, reputation and governance effects on CEO remuneration

Model B is presented in three tables, separated according to the different measures of the dependent variable – CEO total, fixed and performance-based remuneration. The explanatory power of Model B is relatively low for all versions of the model as follow:

- CEO total remuneration (Table 5.9 where R² ranges from 16.3% to 13.2%);
- CEO fixed remuneration (Table 5.10 where R² ranges from 13.7% to 8.2%); and
- CEO performance-based remuneration (Table 5.11 where R² ranges from 10.3% to 8.7%).

These rather low R² are not dissimilar to the results from other studies such as Merhebi et al. (2006) who reported as low as 1.0% or the Productivity Commission (2009) which reported 4.0%. This is because there are numerous factors which may affect CEO remuneration such as the particular country's regulatory environment and business practices (Lee 2009), as well as each particular company's strategy.

Highlights of significant effects on CEO total remuneration based on the results tabulated in Table 5.9 are as follow:

- physical capital productivity in the current and lagged year are significantly positively related to CEO total remuneration;
- the control variables, company size and company growth, are each significantly positively related to CEO total remuneration.

Table 5.9 Panel regression results for Model B – productivity, reputation and governance effects on CEO total remuneration

Models	(B.1)	(B.2)	(B.3)	(B.4)
<i>Measures of productivity and other independent variables</i>	<i>Dependent variable: CEO total Remuneration</i>			
	PARTIAL _t productivity model	MULTI _t productivity model	PARTIAL _{t-1} productivity model	MULTI _{t-1} productivity model
Hausman	0.049	0.048	0.050	0.008
LR	0.000	0.000	0.000	0.000
R ²	0.143	0.163	0.135	0.132
Constant/intercept	13.133	13.153	13.249	13.308
CEOREP	0.065 0.433	0.046 0.568	0.064 0.464	0.065 0.447
INDEPRC	0.084 0.853	0.089 0.858	0.010 0.983	0.033 0.947
RCATTE	-0.006 0.543	-0.003 0.697	-0.006 0.544	-0.007 0.515
LABOR _t	-0.001 0.331			
LABOR _{t-1}			9.50(10) ⁻⁵ 0.915	
STRUC _t	0.001 0.487			
STRUC _{t-1}			0.001 0.028**	
PHYSC _t	0.435 0.069*			

PHYSC _{t-1}			0.387 0.085*	
TOTAL _t		1.246 0.016**		
TOTAL _{t-1}				0.443 0.212
VOLATIL	Omit	Omit	Omit	Omit
SUBOWN	-0.006 0.174	-0.005 0.196	-0.005 0.224	-0.006 0.166
MKTBK	0.019 0.007***	0.015 0.082*	0.024 0.000***	0.023 0.000***
COSIZE	1.12(10) ⁻¹⁰ 0.009***	1.14(10) ⁻¹⁰ 0.009***	1.05(10) ⁻¹⁰ 0.013**	1.07(10) ⁻¹⁰ 0.012**

Notes: * = statistically significant at the 10% (weak significance); ** = 5% (moderate significance); and *** = 1% (strong significance) levels respectively. Each cell reports the coefficients in the first row and the significance level in the second row from different regressions (rounded to three decimal places).

Significant effects on CEO fixed remuneration based on results as tabulated in Table 5.10 are as follow:

- labour productivity and structural productivity for the current year are significantly negatively related to CEO fixed remuneration whereas physical capital productivity is significantly positively related;
- there is a significant and positive relationship between CEO fixed remuneration and lagged labour productivity whereas there is a significant and negative relationship with lagged structural productivity; and
- total productivity in the current year is significantly positively related to CEO fixed remuneration.

The control variables company size and company growth generally do not significantly affect CEO fixed remuneration.

Table 5.10 Panel regression results for Model B – productivity, reputation and governance effects on CEO fixed remuneration

Models	(B.5)	(B.6)	(B.7)	(B.8)
<i>Measures of productivity and other independent variables</i>	<i>Dependent variable: CEO fixed remuneration</i>			
	PARTIAL _t productivity model	MULTI _t productivity model	PARTIAL _{t-1} productivity model	MULTI _{t-1} productivity model
Hausman	0.012	0.015	0.016	0.001
LR	0.000	0.000	0.000	0.000
R ²	0.110	0.137	0.082	0.084
Constant/intercept	13.005	13.005	13.054	13.003
CEOREP	0.091 0.108	0.076 0.161	0.104 0.087*	0.110 0.069*
INDEPRC	-0.386 0.216	-0.378 0.242	-0.371 0.286	-0.313 0.354
RCATTE	-0.003 0.649	-0.001 0.840	-0.005 0.607	-0.004 0.644
LABOR _t	-0.001 0.005***			
LABOR _{t-1}			0.002 0.000***	
STRUC _t	-0.001 0.005***			
STRUC _{t-1}			-0.001 0.002***	
PHYSC _t	0.367 0.034**			
PHYSC _{t-1}			0.004 0.985	
TOTAL _t		1.036 0.040**		
TOTAL _{t-1}				-0.218 0.437
VOLATIL	Omit	Omit	Omit	Omit

SUBOWN	2.89(10) ⁻⁵	0.001	0.001	0.001
	0.992	0.812	0.947	0.908
MKTBK	-0.004	-0.008	-0.002	-0.003
	0.131	0.055*	0.497	0.265
COSIZE	5.49(10) ⁻¹¹	5.63(10) ⁻¹¹	4.84(10) ⁻¹¹	4.98(10) ⁻¹¹
	0.213	0.195	0.265	0.249

Notes: statistically significant at the 10% (weak significance), 5% (moderate significance) and 1% (strong significance) levels respectively. Each cell reports the coefficients in the first row and the significance level in the second row from different regressions (rounded to three decimal places).

Highlights of results in Table 5.11 where there are significant effects on CEO performance-based remuneration are as follow:

- there is a significant and negative relationship between CEO performance-based remuneration and lagged labour productivity but a positive association with lagged structural productivity;
- there is a significant and positive association between CEO performance-based remuneration and both current year and lagged year physical capital productivity;
- total productivity for both the current year and lagged year are significantly and positively related to CEO performance-based remuneration; and
- of the control variables, volatility of ROE has a significant and negative effect on CEO performance-based remuneration unlike company size and growth which have a significantly positive effect.

Table 5.11 Panel regression results for Model B – productivity, reputation and governance effects on CEO performance-based remuneration

Models	(B.9)	(B.10)	(B.11)	(B.12)
<i>Measures of productivity and other independent variables</i>	<i>Dependent variable: CEO performance-based remuneration</i>			
	PARTIAL _t productivity model	MULTI _t productivity model	PARTIAL _{t-1} productivity model	MULTI _{t-1} productivity model
Hausman	0.877	0.798	0.796	0.620
LR	0.000	0.000	0.000	0.000
R ²	0.087	0.103	0.089	0.090
Constant/intercept	13.448	13.446	13.366	13.817
CEOREP	-0.049	-0.077	-0.041	-0.080

	0.650	0.482	0.701	0.466
INDEPRC	-0.174	-0.084	-0.301	-0.350
	0.862	0.934	0.757	0.748
RCATTE	0.002	0.003	0.001	-0.003
	0.929	0.896	0.996	0.914
LABOR _t	5.48(10) ⁻⁵			
	0.984			
LABOR _{t-1}			-0.004	
			0.000***	
STRUC _t	0.002			
	0.231			
STRUC _{t-1}			0.005	
			0.000***	
PHYSC _t	0.777			
	0.023**			
PHYSC _{t-1}			1.031	
			0.023**	
TOTAL _t		2.351		
		0.002***		
TOTAL _{t-1}				2.177
				0.025**
VOLATIL	-2.790	-2.542	-3.154	-3.700
	0.083*	0.103*	0.034**	0.005***
SUBOWN	-0.001	-0.002	0.001	-0.002
	0.930	0.848	0.974	0.876
MKTBK	0.042	0.033	0.057	0.063
	0.007***	0.064*	0.001***	0.000***
COSIZE	5.31(10) ⁻¹¹	5.43(10) ⁻¹¹	5.53(10) ⁻¹¹	5.54(10) ⁻¹¹
	0.021**	0.015**	0.020**	0.017**

Notes: statistically significant at the 10% (weak significance), 5% (moderate significance) and 1% (strong significance) levels respectively. Each cell reports the coefficients in the first row and the significance level in the second row from different regressions (rounded to three decimal places).

5.5 Discussion of results of hypotheses tests

5.5.1 CEO professional reputation – hypothesis 1 (H1)

There is clear evidence that CEO professional reputation positively affects CEO fixed remuneration, but not performance-based remuneration. For the company financial performance models (Model A, Table 5.8), the two models regressed on CEO fixed remuneration show CEO reputation to be significant at the 5.0% level. This significant relationship holds after the control variables of company ROE volatility, size and growth are taken into account. There is also evidence of CEO's professional reputation having a significant positive effect on CEO fixed remuneration at the 10.0% level under the company productivity models for the lagged year (Model B, Table 5.10). These results support hypothesis 1 (H1) that CEO professional reputation affects the level of fixed remuneration that he or she can command.

It is also argued in Chapter 3 that there is no significant association between CEO professional reputation and the performance-based component of CEO remuneration. This is shown in Tables 5.8 and 5.11. Interestingly, this relationship, while non-significant, is found to be negative in Tables 5.8 and 5.11, suggesting that a CEO's professional attributes do not necessarily enable a CEO to have stronger ability to negotiate his or her own performance-based remuneration package.

In aggregate, the relationship between CEO professional reputation and CEO total remuneration is found to be positive but non-significant. The positive effect of CEO professional reputation on fixed remuneration is offset by the non-significant effect on performance-based remuneration.

5.5.2 Remuneration committee's independence – hypothesis 2 (H2)

All 18 regression results show that the ratio of independent directors to the total number of members on the remuneration committee does not have any significant effect on CEO remuneration. Hypothesis 2 (H2) is not supported. This result is consistent with a recent study

by Gregory-Smith (2012) who does not find any evidence of a relationship between CEO remuneration and director independence. Under agency theory, optimal contracting would posit that CEO remuneration is set by the board of directors on behalf of the shareholders in such a way that it attracts and motivates CEOs of the desired calibre without paying more than is necessary (Holmstrom 1979, Prendergast 1999). However, Gregory-Smith (2012) does not find any statistical evidence of a relationship between CEO remuneration and the independence of the remuneration committee. This leads him to speculate that the lack of influence by independent directors on the remuneration committee may be due to managerial power. This is the notion that CEOs are able to capture the pay-setting process (Bebchuk et al. 2005). They effectively set their own remuneration which is constrained only by aversion to the outrage that may be provoked. Accordingly, Gregory-Smith (2012) suggests that policy makers and academics should focus their attention on matters other than board independence in the remuneration-setting process.

5.5.3 Remuneration committee's diligence – hypothesis 3 (H3)

In regard to the diligence of the remuneration committee as proxied by the number of attendances at remuneration committee meetings, the results also consistently show that there is no statistically significant relationship with CEO remuneration. The results do not support hypothesis 3 (H3). Overall, the results indicate that the remuneration committee either lacks authority to implement recommendations about CEO remuneration or does not adequately discharge its responsibility as an effective monitor on CEO remuneration. These findings lend support to the board and board committees capture theory (Doucouliagos et al. 2007).

5.5.4 Company's financial performance – hypothesis 4 (H4)

Three measures of firm's financial performance are modelled, covering accounting earnings-based performance (ROE), cash flow-based performance (CASHFL) and total shareholders return or market-based performance (MKTRTN). Their effects on CEO remuneration are discussed in turn.

Return on equity (ROE): The regression results in Table 5.8 consistently show that there is no significant association between CEO remuneration and ROE whether for the current year or lagged year. This non-significant relationship is especially interesting in respect of CEO performance-based remuneration (Table 5.8, models A.5 and A.6). The inference is that CEO remuneration is not affected by firm profitability in the short-term, or alternatively, the particular performance measure of ROE tends to be excluded as a performance criterion for setting CEO performance-based remuneration perhaps because it is too readily open to accounting manipulation. Hence, hypothesis 4 (H4) is not supported where ROE is used as a measure of company financial performance.

Net operating cash flow (CASHFL): The results show a significantly positive relationship between net operating cash flow for the current year and each category of CEO remuneration – total, fixed and performance-based (Table 5.8, columns A.1, A.3 and A.5). This implies that liquidity and the company's ability to pay from operating activities are important considerations in influencing CEO remuneration (Niap et al. 2012a). Furthermore, the results show that the net operating cash flow for both the current and previous year has a positive impact on CEO performance-based remuneration. Arguably, companies deem net operating cash flow as a relatively important measure of company performance during times of financial crisis. Liquidity is likely to be a factor that has a positive effect on share price especially in times of financial crisis; hence the significant positive relationship with performance-based remuneration which includes share-based remuneration. H4 is supported in terms of using net operating cash flow in the current year as a measure of company financial performance.

However, there is a significant negative relationship between CEO fixed remuneration and net operating cash flow lagged one year (Table 5.8, model A.4). One plausible explanation is that the remuneration structure as reflected in employment contracts is inefficient which results in a negative impact on company performance (Matolcsy et al. 2011). An efficient contract, in contrast, is one where agency costs are minimised (Jensen et al. 1976) and is determined by the underlying economic characteristics of the company. Hence, the amount of CEO fixed remuneration, by its nature and definition, is fixed by employment contracts without any regard for performance hurdles, where the extent payable is dictated in the contract regardless of liquidity. Another plausible explanation is that companies wish to employ or retain the most reputable CEO that they can possibly find especially in times of

financial crisis regardless of the company's net operating cash flow. That is, companies may be taking a long term view of compensating a CEO to survive through the GFC and grow beyond it.

Total shareholders' return from dividends and capital(share price) gains (MKTRTN):

There is no significant effect on CEO remuneration of total shareholders or market returns, which comprise of not just the change in share prices but also the dividend per share for the year, be it for the current year or previous year (Table 5.8, models A.1 to A.6). Hypothesis 4 (H4) is not supported on this market-based measure of company financial performance. These results are generally consistent with those of the Productivity Commission (2009). Doucouliagos et al. (2007) also does not find any significant relation between CEO remuneration and market based measures, albeit in the Australian banking industry. The only exception is for regression (A.4) where there is a significantly positive association between CEO fixed remuneration and total shareholders return for the previous year. This implies that companies take into consideration whether shareholders have been well-rewarded in the previous year prior to increasing CEO fixed remuneration. Since CEO performance-based remuneration is by nature more risky, especially in volatile economic periods, the CEO would presumably prefer to be rewarded with a fixed amount in the form of a negotiated pay rise rather than performance-based remuneration. Again, there is no significant relationship between CEO total remuneration and total shareholders return lagged one year because of the non-significance of the performance-based remuneration component.

In summary, the results in Table 5.8 indicate that company financial performance based on net operating cash flows is significantly related to CEO remuneration (whether total, fixed or performance-based), but is not significant for accounting-based ROE or market-based MKTRTN measures of company performance.

5.5.5 Company's productivity performance – hypothesis 5 (H5)

While ultimately it is company total productivity that matters, regression analysis is presented for partial productivity measures also because, as discussed in section 2.5.4, they provide further insight into the impact that the individual inputs have on productivity (Brinkerhoff et

al. 1990). Hence, the results for the effects of labour, structural, physical capital and total productivity on CEO remuneration are discussed in turn.

Labour productivity: Table 5.10 (model B.5) reveals a significantly negative relationship between CEO fixed remuneration and labour productivity for the current year. This is in the opposite direction to the positive effect of firm's productivity performance on CEO remuneration as hypothesised by H5. The negative relationship with labour productivity suggests that the fixed remuneration of both the CEO as well as the other employees of the company has increased at the expense of labour productivity. One possible explanation for the negative relationship with labour productivity is that the remuneration structure as reflected in employment contracts is inefficient which results in a negative impact on company performance (Matolcsy et al. 2011). Olson (1996) argues that wage hikes may occur without reference to market conditions but by institutional factors such as unions and collective bargaining. Hansson (2004) also argues that companies may be forced to increase wages due to strong labour unions and labour regulations. Strong labour unions create a minimum wage environment which forces companies to increase their wages. Labour regulations which compel companies to retrench employees on the basis of "last in first out" means that longer serving employees tend to be retained in a retrenchment exercise and these longer serving employees tend to be on higher wages (Hansson 2004). However, this labour regulation is less prevalent in Australia. Increased labour costs lead to lower company earnings and hence labour productivity falls for the current year.

In contrast, Table 5.10 (model B.7) shows that there is a statistically significant positive association between CEO fixed remuneration and lagged labour productivity. The inference is that employees including the CEO use the improvement in labour productivity in the previous year as justification for demanding higher fixed wages in the current year. In turn, this increase in employees' wages could have a negative effect on the current year's labour productivity, unless employees are motivated after receiving those pay hikes to strive to further boost productivity (Kennedy 1995).

Table 5.11 reveals there is no statistically significant relationship between CEO performance-based remuneration and labour productivity for the current year. This probably dilutes the impact from fixed remuneration and hence there is no statistically significant relationship between CEO total remuneration and labour productivity for the current year too. However,

there is a significantly negative relationship between CEO performance-based remuneration and the previous year's labour productivity. This result may be due to a lagged effect that poor labour productivity has on the company's share price which in turn affects the market-based performance criterion applied in the CEO's performance-based remuneration. However, caution should be exercised in the interpretation of results pertaining to performance-based remuneration where share price is involved. Accounting standard AASB 2 "Share-based payment" (ICAA 2009) requires equity incentives to be revalued to fair value at each balance date. This introduces volatility in the reporting of the value of share based remuneration which may be negative one year and positive the following year. Furthermore, not all companies link CEO remuneration directly to share price performance due to the number of factors that may impact on share price performance (Australian Council of Super Investors 2010).

Structural productivity: In Table 5.10, there is a significantly negative relationship between CEO fixed remuneration and structural productivity in the current year as well as lagged one year. One possible explanation is that CEOs may be driven by the desire to grow the company beyond its optimal size, by whatever means such as mergers and acquisitions, so as to obtain the pecuniary and non-pecuniary benefits that are associated with larger companies (Cosh 1975, Gregory-Smith 2012). Growing the company may result in an increase in its labour costs and net intangible assets, hence the detrimental effect on structural productivity. However, the results also show that company size is not significant. Prima facie, the results appear confounding. However, for this study, company size is represented by total assets which include recognised intangibles. What might have happened is that companies may have attempted to increase their labour (and or their intangible assets) via mergers and acquisitions instead. However, the result also shows that there is a significantly positive relationship between CEO performance-based remuneration and lagged structural productivity which confirms hypothesis 5 (H5) to some extent (Table 5.11, model B.11). Perhaps CEO performance-based remuneration is tied to the CEO improving the utilisation of the company's intellectual capital.

Physical capital productivity: The results in Table 5.11 show a significantly positive relationship between CEO performance-based remuneration and physical capital productivity for both the current year and lagged one year which supports hypothesis 5 (H5). In addition, the significantly positive association between CEO fixed remuneration and physical capital

productivity for the current year, given in Table 5.10, suggests that physical capital productivity influences CEO fixed remuneration also, not just the performance-based component. However, during the period of economic downturn covered in this study, the book value of companies' physical assets would have not grown, or may even have decreased due to impairments as required by the accounting standard AASB 116 "Property, Plant and Equipment" (ICAA 2009). This may be the reason for the significantly positive relationship between CEO fixed remuneration and physical capital productivity.

Since there is a significantly positive relationship between both components (fixed and performance-based) that comprise CEO total remuneration and physical capital productivity for the current year, hence the result in Table 5.9 shows that there is a significantly positive relationship between CEO total remuneration and physical capital productivity for the current year too.

In summary, the effects on total CEO remuneration, shown in Table 5.9, for physical capital productivity are similar to those for total productivity which suggests that company total productivity is driven by physical capital productivity. That is, company productivity appears to be mainly driven by the efficient and effective use of the company's physical assets.

Total productivity: While the results discussed above pertaining to partial productivity measures provide some insight, it is ultimately the relationship between CEO remuneration and company total productivity that will affect the value of the company to the shareholders. The total productivity construct is based on how much gross value-added (GVA) the company, through the CEO, can generate for each dollar of collective capital, both intellectual, which includes human capital, and physical. In contrast, labour productivity represents just one component of capital which is human capital. Furthermore, Lajili et al. (2005) note that labour costs are usually incorporated in the cost of goods sold as well as general and administrative expenses. Therefore, the total productivity measure would encapsulate all labour costs although with the current regulatory regime in Australia, companies are required to disclose total labour costs as a separate item in their annual reports.

According to Fong (2010), CEOs decisions in regard to stakeholder management may depend on those CEOs perceptions as to whether they themselves are remunerated fairly. Fong's (2010) contention, however, is not grounded in stakeholder theory but rather on

organisational behaviour theories such as social comparison theory. Since CEOs are supposedly aware of the labour market wage rate for CEOs, they can make comparisons to determine if they are being remunerated fairly. They may then demand higher compensation. Kennedy (1995) conjecture that wages, particularly wage relativity in terms of how much workers are paid in comparison to their colleagues, affect employees' morale and ultimately their productivity. This would consequently impact on the company's productivity. Using Kennedy's (1995) argument, it is suggested that there is upward pressure on remuneration to the detriment of labour productivity. On the other hand, it can be argued that higher remuneration is paid to better skilled employees and therefore the return on this human capital is reflected in increased total productivity. On balance, it is expected that the company, through its CEO, manages the company's total capital, both physical and intellectual, in a synergistic way to increase total productivity despite the pressure of escalating labour costs in growing the company.

This possible explanation is given further credibility when considering the association between CEO fixed remuneration and the previous year's labour productivity. The significantly positive relationship shown in Table 5.10 model B.7 suggests that the employees including the CEO improve their total productivity in the current year after receiving a pay boost in the previous year in order to justify their pay increases.

The regression results in Table 5.11 show that there is a statistically significant and positive relationship between CEO performance-based remuneration and company total productivity, both current year and lagged one year. The inference is that company total productivity drives CEO performance-based remuneration. However, it cannot be discounted that the increase in CEO performance-based remuneration may then serve as further motivation for the CEO to strive to further improve the company's total productivity, and this repeats in a cycle. Testing this is beyond the scope of this study given that the focus is only for the three years from 2007 to 2009. This study shows that there is a significantly positive association between CEO remuneration and company total productivity which suggests that stakeholder theory does hold, and that agency theory, with its central theme of individual self-interest coming first, is not necessarily the more dominant theory in explaining CEO remuneration.

5.5.6 Company's ownership concentration – hypothesis 6 (H6)

The results in Tables 5.8 to 5.11 consistently show that the percentage of shares owned by substantial shareholders, which is a proxy for the influence of substantial shareholders, have no statistically significant influence on CEO total remuneration. In addition, the Pearson correlations between the variable the percentage of shares owned by substantial shareholders and the other variables are less than 0.300 which indicates no association between them (Tables 5.5 to 5.7). This is probably due to the curtailment on the ability of shareholders to dictate CEO remuneration since there has been no regulatory requirement in Australia that has compelled companies to accept the majority shareholders decision in regard to CEO remuneration prior to 2011. The only exception is regression (A.2) which shows that substantial shareholders have a significantly negative influence on CEO total remuneration, as hypothesised. This regression is based on lagged company financial performance measures. It is possible that substantial shareholders' influence may be due to the outrage sparked over excessive CEO remuneration in total especially during the GFC which would tend to act to dampen CEO pay increases. And the lagged effect may be due to the fact that shareholders usually become aware of the company's performance after the financial year end since annual reports are not required to be audited and published until a few months after the financial year end.

However, given that there is only one significant association out of 18 regressions, this result should be treated with caution especially since there appears to be no significant relationship between the lagged conventional financial performance measures and CEO total remuneration. Further study may be warranted on the effect of substantial shareholders on CEO remuneration. Although there is a significantly negative relationship between substantial shareholders and CEO total remuneration, there is no statistically significant association with both CEO fixed remuneration and performance-based remuneration. However, there is a positive, albeit insignificant, relationship with CEO fixed remuneration and a negative but insignificant relationship with CEO performance-based remuneration. The effects of substantial shareholders on both components of CEO remuneration may have offset each other to yield a significant net negative effect on CEO total remuneration.

5.6 Discussion of results for control variables

Volatility: In regard to risk, the results in Tables 5.8 to 5.11 consistently show a significantly negative relationship between CEO remuneration and volatility, where volatility represents the standard deviation of the particular company's ROE over the last five years. Such results contrasts with the finding by Pukthuanthong et al. (2004) who document a positive relationship between CEO remuneration and both the standard deviation of ROE and the standard deviation of shareholders return, although they only find the standard deviation of ROE to be significant. However, where the Hausman test dictates that fixed effects regression should be used, the results are omitted. This is because the standard deviation of ROE is a time invariant variable and therefore is omitted from the fixed effects regression model.

The results imply that companies may be risk averse and do not like volatility in reported earnings and therefore penalise CEOs for any increase in the variability of ROE. Therefore, this result is as expected.

Market-to-book value ratio (proxy for company growth): The results in Tables 5.9 and 5.11 strongly suggest that there is a significantly positive relationship between CEO total remuneration and performance-based remuneration with the market-to-book value ratio. This contrasts with the finding by Francis et al. (1999) who find company growth, and whether a company is in the high-technology or traditional industry, are not major factors in CEO remuneration. As discussed in section 3.4.4, the market-to-book value ratio can be a proxy for unrecognised intangible assets or company growth or company value. The results suggest that CEO performance-based remuneration is positively associated with company growth and company value. It is also possible that CEO performance-based remuneration overcomes the effect of fixed remuneration to affect total remuneration, hence the significantly positive relationship between CEO total remuneration with company value. There is no statistically significant association between CEO fixed remuneration and the market-to-book value ratio with the exception of regression B.6 (Table 5.10) which shows a significantly negative relationship. A relationship between CEO fixed remuneration and the market-to-book ratio would not be expected since this market-to-book value ratio fluctuates with share price fluctuations. Thus, the one significantly negative relationship from regression B.6 may be due to an inefficient employment contract.

Company size: From the results in Tables 5.8 to 5.11, it can be observed that company size in general has a significantly positive effect on total CEO remuneration as well as on every component of CEO remuneration. This is consistent with the literature for example Merhebi et al. (2006), Doucouliagos et al. (2007) and the Productivity Commission (2009). The exception is with the productivity model regressions for CEO fixed remuneration in Table 5.10 where there is no significantly positive association with company size. This may be due to the productivity measures and or CEO professional reputation having a stronger influence on CEO remuneration compared to company size. Or, it might be due to the forces of the labour market which dictate how much CEOs and their peers should receive as fixed remuneration. However, given the large number of regressions that are run in this study, the fact that 14 out of 18 regressions show a significant positive relationship between company size and CEO remuneration leads to the conclusion that company size is a factor in determining CEO remuneration.

5.7 Conclusion

This chapter has presented the results of data analysis for determinants of CEO remuneration, categorised into fixed, performance-based and total remuneration. The determinants have been separated into company financial performance and company productivity models. Other determinants which are common to both models are CEO professional reputation, the governance characteristics relating to the remuneration committee and the ownership structure (concentration), and the control variables which are the volatility of ROE, market-to-book value ratio and company size. The results for hypotheses tests broadly reveal the following:

- CEO's professional reputation is positively related to CEO fixed remuneration (hypothesis 1 H1 is supported);
- remuneration committee's governance characteristics are not related to CEO remuneration (hypotheses 2 and 3, H2 and H3, are not supported);
- financial performance measures in terms of net operating cash flows only are, generally speaking, positively related to CEO remuneration (hypothesis 4 H4 is supported to some extent);

- productivity performance measures give mixed results in regard to the effect on CEO remuneration (hypothesis 5 H5 is partially supported). However, H5 is supported if only company total productivity is considered; and
- share ownership concentration is not related to CEO remuneration (hypothesis 6 H6 is not supported).

Chapter 6. CONCLUSIONS

6.1 Overview

This study, based on a sample of 82 companies from the ASX Top 200, provides insights into the factors that have affected CEO remuneration during a period of high economic turbulence. This period spans three years from 2007 to 2009 which covers the height of the global financial crisis. The primary purpose of this study is twofold. Firstly, it is to provide evidence on whether, during a period of economic turbulence, CEO professional reputation stands up as a significant determinant of CEO remuneration, or whether it is company financial performance, measured by conventional accounting and market-based measures, together with corporate governance structures, that determines CEO remuneration. Secondly, the purpose is to provide evidence on whether company productivity, as an alternate measure to company financial performance, is a significant determinant of CEO remuneration.

6.2 Summary of results of hypotheses tests and control variables

Findings in relation to the six hypotheses as well as the control variables in this study are summarised on one page in the following table 6.1. This summary combines the regression results from Tables 5.8 to 5.11 in terms of whether there are significant relationships between the independent variables and the dependent variable which comprise of various measures of CEO remuneration. They are discussed in turn.

Table 6.1 Summary of the regression results in terms of the significance of the relationships between the dependent variable CEOREM and the independent variables

Table	Table 5.8						Table 5.9				Table 5.10				Table 5.11			
Model	A.1	A.2	A.3	A.4	A.5	A.6	B.1	B.2	B.3	B.4	B.5	B.6	B.7	B.8	B.9	B.10	B.11	B.12
R ²	0.424	0.216	0.445	0.130	0.130	0.210	0.143	0.163	0.135	0.132	0.110	0.137	0.082	0.084	0.087	0.103	0.089	0.090
Variable																		
CEOREP	NS	NS	+	+	NS	NS	NS	NS	NS	NS	NS	NS	+	+	NS	NS	NS	NS
INDEPRC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RCATTE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ROE _t	NS		NS		NS													
ROE _{t-1}		NS		NS		NS												
CASHFL _t	+		+		+													
CASHFL _{t-1}		NS		-		+												
MKTRTN _t	NS		NS		NS													
MKTRTN _{t-1}		NS		+		NS												
VOLATIL	-	Omit	-	Omit	-	-	Omit	Omit	Omit	Omit	Omit	Omit	Omit	Omit	Omit	Omit	-	-
SUBOWN	NS	-	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MKTBK	+	+	NS	NS	+	+	+	+	+	+	NS	-	NS	NS	+	+	+	+
COSIZE	+	+	+	+	+	+	+	+	+	+	NS	NS	NS	NS	+	+	+	+
LABOR _t							NS				-				NS			
LABOR _{t-1}									NS				+					-
STRUC _t							NS				-				NS			
STRUC _{t-1}									+				-					+
PHYSC _t							+				+				+			
PHYSC _{t-1}									+				NS					+
TOTAL _t								+				+				+		
TOTAL _{t-1}										NS				NS				+

Notes: NS indicates that there is no significant relationship between the respective independent variable and the dependent variable CEOREM for the respective model; + indicates a significant positive relationship; - indicates a significant negative relationship; Omit indicates that the variable was omitted from the regression.

The results show that there is a positive relationship between CEO fixed remuneration and CEO professional reputation which confirms hypothesis 1. This shows that the personal accomplishments of a CEO, based on her or his levels of educational, professional memberships, and managerial appointments, is a strong rationale for the amount of fixed remuneration that is awarded to that CEO.

In regard to hypothesis 2, the results relating to the ratio of independent directors on the remuneration committee show that having more independent directors does not have a constraining effect on CEO remuneration. The results show no significant relationship between the composition of the remuneration committee and CEO remuneration. This finding may not necessarily be due to the composition of the remuneration committee per se but may be due to the definition of director independence as debated by authors such as Bebchuk et al. (2005) and Li et al. (2011). Furthermore, the results show, contrary to hypothesis 3, that the diligence of the remuneration committee does not have any bearing on CEO remuneration. These findings contribute to the debate on whether there are flaws in the Anglo-Saxon model of corporate governance especially given that this study is based on more recent data.

Prior literature has used mainly ROE and ROA as the accounting based measures of company performance. This study takes a different approach and uses the net operating cash flow as one of the measures in addition to ROE, and finds that there is a significantly positive relationship between CEO performance-based remuneration and company performance as measured by net operating cash flow which supports hypothesis 4. This is evidence that company performance related to cash flows receives heightened priority during a period of economic turbulence.

An important contribution of this study is its use of company productivity as an alternate measure of company performance. The results show that there is a significantly positive relationship between CEO performance-based remuneration and company total productivity, both for the current year and lagged one year, which further supports hypothesis 5.

The results for hypothesis 6 show that the effectiveness of outside shareholders in monitoring CEO remuneration is somewhat limited. This may be due partly to the regulatory environment which does not give the owners of the company, the shareholders, binding authority in the determination of CEO remuneration. The agency theory expectation is that

the board of directors know more than the shareholders about the quality and effort of top management. However, the results relating to remuneration committee composition (and diligence) indicate that this knowledge may not necessarily be effective due to the board capture theory (Doucouliagos et al. 2007) and arguments from authors such as Bebchuk et al. (2005) that directors tend to ratchet CEO remuneration above the industry average on the justification that this is the prevailing practice rather than seeking the best deal for their shareholders. The results show that substantial shareholders exert downward pressure on CEO total remuneration; but they are generally non-significant, with the exception of the result from regression A.2, which indicates that hypothesis 6 is not supported.

In terms of control variables, the volatility of company financial performance (that is, the standard deviation in ROE), is found to have a negative influence on CEO remuneration. In addition, the results confirm that company growth, as proxied by the market-to-book value ratio, has a positive effect on CEO performance-based remuneration. And, consistent with prior literature, company size has a significantly positive effect on CEO remuneration.

6.3 Implications of the findings and contribution to the literature

The main implications of the study and contribution to the literature are threefold. First, there is no known prior research which has explored the relationship between CEO remuneration and CEO reputation. Therefore, this study provides more insight into the drivers of CEO remuneration by introducing a driver which has not been researched in the past, CEO personal reputation; or more specifically CEO professional reputation. This study also takes advantage of changes to the regulatory regime in Australia which requires listed companies to provide more detailed information in regard to executive remuneration in their annual reports. The improvement in the disclosure of information in the annual reports enables research on the relationships between not just CEO total remuneration, but also its components of fixed remuneration and performance-based remuneration. The results show that the determinants of fixed remuneration differ from determinants of performance-based remuneration. This study provides the first known attempt to construct a CEO professional reputation index. A review of the literature indicates that no prior studies have attempted to construct a CEO personal or professional reputation index (Niap et al. 2012a). As a sub-set of personal reputation, this study provides a measure of professional reputation based on objective data of the CEO's

professional accomplishments. This would typically be an aspect of the recruitment decision concerning a CEO, but it is also found in this study to have implications for the setting of the CEO's fixed remuneration. The notion that CEO's with higher professional credentials will command higher fixed remuneration is a matter of interest for human resource and management accounting researchers, and suggests the need for more in-depth investigation of broader aspects of personal reputation and cost-benefit analysis of CEO fixed remuneration, especially during a period of economic turbulence when cuts are sought in the firm's labour costs.

Second, there has been no known systematic modelling of the relationship between CEO remuneration (including total, fixed and performance-based remuneration) and company productivity (both partial and multifactor productivity measures). This study contributes to the literature by exploring not just the relationship between CEO remuneration and company productivity, but also provides a more in-depth insight by breaking down CEO total remuneration into its two major components. Furthermore, this study not only looks at company total productivity, but also looks at company partial productivity, namely the three components that make up total productivity, which are labour productivity, structural productivity and physical capital productivity. The results have yielded findings which show a significant relationship between fixed remuneration, not just performance-based remuneration, and productivity. The attention drawn in this study to the relationship between company productivity and CEO remuneration has wider economic implications. Productivity is a key source of economic growth (OECD 2012). Therefore, company total productivity (as measured by the concept of 'value-added') is an indicator of how well a company is contributing to growth in the economy. Given that economic growth typically measures the growth of production output, the value-added measures used in this study indicates the company's output relative to various inputs. Hence, to reward CEO's for company performance that positively affects the growth of the economy is a criterion that governments (and hence, corporate governance regulators) should be especially interested in. Moreover, the misalignment of CEO remuneration and the company's overall labour productivity is a matter that can attract trade union and media attention and hence, costs to shareholders. So the monitoring of this relationship should become an important corporate governance issue.

Third, this study has re-visited the evidence of the relationship between CEO remuneration and company financial performance. But it has done so for a period of years that covers the

GFC. The interesting finding is that net operating cash flow has become the dominant financial performance factor that has driven CEO remuneration. The inference is that CEO remuneration packages appear to have been adjusted due to the market conditions created by the GFC. The implication is that the terms and conditions in contracts for determining the different components of CEO remuneration should have flexibility based on changing circumstances that affect current and expected future company productivity, cash flow and earnings. CEO personal reputation, should a more comprehensive and reliable measure be developed by future research, would have a moderating influence on this flexibility in CEO remuneration packages.

6.4 Limitations of this study

There are limitations to the empirical modelling and variable measurement in this study. Firstly, the empirical models do not include all conceivable variables; in particular, a comprehensive set of corporate governance variables. For example, the characteristics of the board of directors in terms of independence, expertise and diligence, as well as the authority delegated by the board to the remuneration committee are not considered. The focus is only on the remuneration committee which makes its recommendations in regard to CEO remuneration to the board. Another governance-related variable that is not included in this study is CEO ownership as represented by the number or percentage of shares that are owned by the CEO. Since this study explores the drivers of CEO remuneration where remuneration in the form of shares and options is included as part of CEO total remuneration, it would be tautological to include CEO ownership as an independent variable that affects CEO remuneration.

Secondly, the data that can be collected to measure some variables (as a proxy of the concept for which these variables are purported to measure) are limited. For instance, the measurement of professional membership as a proxy for CEO professional reputation does not include measures such as honorary awards since data is not consistently available. In addition, it can be argued that professional engagement is a better proxy measure than professional membership. Professional engagement is a broader proxy because it takes into consideration CEO active involvement in professional bodies such as key note speaker for seminars organised by professional bodies, writing for journals, and holding office as the

president of the professional body. Such data, however, are not readily available. Similarly, the proxy measure of CEO level of education is restricted to formal academic qualifications such as diplomas and degrees as awarded by universities and colleges. However, it is recognised that education is wider than that and may include short term executive courses. But such data are not available from a central source. Also, the measurement of remuneration committee diligence is based on the number of meetings attended by the members. However, the frequency of attendance may not reflect the quality of diligence exercised by members in preparing for meetings and following up on action items between meetings.

Thirdly, there are alternative measurements of variables. For example, the independence of the remuneration committee can be measured by the physical number of independent directors on the remuneration committee. Or independence can be measured as a ratio, which is the approach taken in this study. The latter is, arguably, a better approach since it takes into account the mix of independent and non-independent directors. Another example is the variable shareholder activism. Shareholder activism may be measured using the existence of a resolution to increase executives' remuneration as stated in the notice of the company's Annual General Meeting (AGM) as a proxy (Liu et al. 2008). For this study, an indication of shareholder activism is implied from the percentage of shares owned by substantial shareholders.

Fourthly, the model specifications could include other variables and (inter)relationships that could be studied. For example, in terms of the range of variables, the demand-side factors of CEO remuneration (refer section 1.2) are not considered. Further, in terms of the possible relationships, this study does not model, for example, the relationship between CEO professional reputation and corporate performance. Such additional variables and relationships are treated as beyond the scope of this study due to the loss of parsimony that could be caused to the models.

Finally, the econometric techniques that are currently available have their limitations. While acknowledging that regression analysis is a useful tool, the Productivity Commission (2009) also recognises that there are limitations in using regression analysis. This is indicated in the conclusions that are derived from prior studies. For example, some researchers identify statistically significant relationships between executive remuneration and one or more measures of corporate performance (Doucouliagos et al. 2007, Merhebi et al. 2006) while

others find no evidence of such relationships (Izan et al. 1998, Capezio 2008). Furthermore, the data on CEO remuneration and corporate performance that are available limit the capability of the regression model to explain variances in CEO remuneration. For example, the available data does not normally tell whether a CEO is dismissed for poor performance or has decided to retire or pursue other interests. While regression analysis is useful for generalisability, some companies may use different company performance measures to the ones in this study. Company performance measures may be quantitative and/or qualitative. For example, a CEO may be given a bonus if she or he 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 company performance measure is improving customer satisfaction (Gay et al. 2007). However, by pursuing quantitative data analysis using panel regressions, this study follows a widely adopted method used in prior executive remuneration studies. Regression analysis provides an objective quantification in statistical terms of the probability that the variables are related across a sample, but is not able to identify the complexities of organisational and human behaviour that exist at the case level (Gay et al. 2007).

6.5 Suggestions for future research

Future studies may consider addressing the limitations discussed above. One such direction is to consider pay-performance elasticity or sensitivity. This research examines changes in CEO remuneration relative to changes in shareholder wealth. Also the size elasticity of pay can be considered in terms of the association between CEO remuneration and company size (Merhebi et al. 2006). Another example would be to explore various interactions such as the relationship, if any, between CEO professional reputation and company performance, and the effect that corporate governance factors has on this relationship. There is an opportunity for further assessment of the extent of influence that corporate governance factors may have on the relationship between CEO professional reputation and CEO remuneration.

In addition, the sample size may be increased to say the ASX Top 300, companies with balance dates other than 30 June, and or the study period extended to the financial year 2010 to determine if there are any lagged effects from the GFC. Also, a future study could consider executive or KMP remuneration, rather than just CEO remuneration.

Another possible avenue for future research is to further break down the components of CEO remuneration. In particular, CEO performance-based remuneration can be further decomposed into short term performance-based remuneration such as bonuses versus long term performance-based remuneration such as shares and options-based remuneration.

With the introduction of relatively new legislation, namely the Corporations Amendment (Improving Accountability on Director and Executive Remuneration) Act 2011 (Commonwealth), shareholders now have some influence on CEO remuneration. Prior to this piece of legislation, the Corporations Act 2001 (Commonwealth) required listed companies to present their remuneration reports at their annual general meetings for a non-binding shareholder vote. However, there have been no consequences if the boards disregard any negative shareholder vote and continue with their remuneration policies (Pick et al. 2011). With this new legislation, directors (other than the managing director) would have to stand for re-election after two strikes of negative vote against the remuneration report by 25 percent or more of the shareholders. Hence, future study may consider whether the presence of substantial external shareholders, subsequent to the introduction of that piece of legislation, ensure that CEO remuneration is tied to CEO professional reputation and company conventional financial performance and productivity. Another piece of legislation, the Corporations Legislation Amendment (Remuneration and Other Measures) Bill 2012, was proposed by the previous Labor government. This bill proposed remuneration disclosures in regard to KMP pay, present and future pay; as well as whether a clawback was applied where a KMP was overpaid as a result of any material misstatements in the company's accounts (Pugsley, Moule, Ie and Rieusset 2012). However, this bill was not enacted prior to the election and the Coalition government has not enacted any such legislation (Guerdon Associates 2013).

Future studies may also consider improving on the CEO professional reputation index that has been developed in an exploratory way in this study, especially if more data on reputation of individuals become available. The CEO professional reputation index that has been developed in this study could serve as a starting reference point.

In terms of future study pertaining to productivity, the number of years studied may be increased to say twenty years to determine if productivity drives CEO remuneration or the

other way around. The regression results show that there is a statistically significant and positive relationship between CEO remuneration and company productivity. A unidirectional effect of company productivity on CEO remuneration has been hypothesised in this study. However, it cannot be discounted that the increase in CEO remuneration may then serve as further motivation for the CEO to strive to further improve the company's total productivity, and this repeats in a cycle. Testing this is beyond the scope of this study given that the focus is only for the three years from 2007 to 2009.

Future studies can also compare between countries since there may be cultural differences, or cross-cultural differences (Anastasi 1988). There is evidence of differences in determinants of executive remuneration by regions, such as in the Arabian Gulf countries (Baydoun et al. 2013).

By modelling and testing the effect of reputation, governance and both conventional financial performance and productivity on different categories of CEO remuneration, this study has provided a lead for future research on determinants of executive remuneration.

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Appendix: Example of normal P-P plot of regression standardised residual

