The relationship between ASX recommendations on audit committees and corporate performance

Ismail Gani

Southern Cross University

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THE RELATIONSHIP BETWEEN ASX RECOMMENDATIONS ON AUDIT COMMITTEES AND CORPORATE PERFORMANCE

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School of Business & Tourism

Doctor of Business Administration

A thesis submitted to the School of Business and Tourism, Southern Cross University, in partial fulfilment of the requirements for the Degree of Doctor of Business Administration.

November 2015
I certify that the work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for a degree at this or any other University.

I acknowledge that I have read and understood the University’s rules, requirements, procedures and policy relating to my higher degree research award and to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University.

Ismail Gani
November 2015
Acknowledgements

The completion of this thesis would not have been possible without the assistance, encouragement, understanding and support of many people.

Special acknowledgement and immense gratitude is due to my principal supervisor Professor Ian Eddie for his excellent guidance, sound advice, constructive feedback, encouragement and support. My appreciation is also extended to my co-supervisor, Associate Professor Albert Wijeweera, for his assistance and guidance with the analytics part of my thesis.

I would also like to express my appreciation to Dr. Robert Sadler, Dr. Michael Singleton, and Dr. James Cowley for their guidance and advice during the initial stages of my research. I acknowledge the assistance of Associate Professor Michael Charles, the staff at Southern Cross University Library, and School of Business and Tourism.

Many thanks go to my parents and family for their support and encouragement throughout this and previous accomplishments.

Most of all, I am forever grateful to my wife and son for their endless support, understanding, patience and encouragement which enabled me to complete my studies.
The objective of this study is to determine whether compliance with ASX Recommendation 4.3 as part of Australia’s corporate governance reforms is related to the performance of corporations. In order to investigate this matter, companies operating in the materials sector that are ranked in the top 500 companies listed on the ASX were analysed. The research question is:

Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, do those corporations that comply with ASX Recommendation 4.3, achieve higher corporate performance?

This study used secondary numerical and historical data to answer the research question. The study period was derived from reports of the corporations for years ended 30 June 2006, 30 June 2007 and 30 June 2008. The data includes board characteristics, audit committee characteristics and financial data. The study included 54 corporations; 30 of them complied with Recommendation 4.3 and 24 did not.

Panel data estimation regression analysis was selected as a suitable statistical technique for this study. A random effects model regression analysis was conducted (with six variables in total) for the dependent variables: Reported Net Profit (RNP), Return on Assets (ROA), Return on Equity (ROE), +/- Market (M), Price Earnings Ratio (PER) and Price Cash Flow Ratio (PCFR). Conclusions and implications were only drawn for ROA and ROE as the results for the remaining variables presented a low percentage of overall fit and statistically insignificant probability values, and so statistical inferences could not be drawn.

This study answered the research question by concluding that corporations that operate within the materials sector ranked in the top 500 companies (by market capitalisation) listed on the ASX that comply with ASX Recommendation 4.3, achieve higher corporate performance as measured by return on assets and return on equity.

Key Words: Corporate governance, corporate boards, company directors, audit committees and corporate performance. The terms ‘corporation', 'organisation', 'company’, 'entity' and 'firm' have the same meaning and are used interchangeably.
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<thead>
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<th>Term</th>
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<tr>
<td>AASB</td>
<td>Australian Accounting Standards Board</td>
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<td>AGM</td>
<td>Annual General Meeting</td>
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<td>ALLORDS</td>
<td>All Ordinaries Index</td>
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<tr>
<td>ANU</td>
<td>Australian National University</td>
</tr>
<tr>
<td>APRA</td>
<td>Australian Prudential Regulation Authority</td>
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<td>ASIC</td>
<td>Australian Securities and Investment Commission</td>
</tr>
<tr>
<td>ASX</td>
<td>Australian Stock Exchange prior to its 2006 merger with the Sydney Futures Exchange and following its merger as the Australian Securities Exchange. From 1 August 2010, as the ASX Group and/or ASX Limited.</td>
</tr>
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<td>AUASB</td>
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<tr>
<td>CACG</td>
<td>Commonwealth Association for Corporate Governance</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>CEOPAY</td>
<td>Chief Executive Officer's Total Remuneration</td>
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<td>CLERP</td>
<td>Corporate Law Economic Law Reform</td>
</tr>
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<tr>
<td>CLERP9Act</td>
<td>Corporate Law Economic Law Reform (Audit Reform and Corporate Disclosure) Act 2004 (Cth)</td>
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<td>COSO</td>
<td>Committee of Sponsoring Organisations</td>
</tr>
<tr>
<td>Term</td>
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<tr>
<td>CPA</td>
<td>Certified Practising Accountant</td>
</tr>
<tr>
<td>Cth</td>
<td>Commonwealth of Australia</td>
</tr>
<tr>
<td>EBIT</td>
<td>Earnings before Interest and Tax</td>
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<tr>
<td>FRC</td>
<td>Financial Reporting Council</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GICS</td>
<td>Global Industry Classification Standard</td>
</tr>
<tr>
<td>ICA</td>
<td>The Institute of Chartered Accountants</td>
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<td>M</td>
<td>+/- Market</td>
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<td>MACQ</td>
<td>Macquarie University</td>
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<td>PCFR</td>
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<td>PER</td>
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<td>UWS</td>
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Chapter 1 – Introduction

1.1 Introduction

The focus of this study is on whether compliance with the audit committee requirements recommended by the ASX Corporate Governance Council as part of its corporate governance reforms enhances corporate performance.

This chapter comprises 10 sections, as depicted in Figure 1.1.

Figure 1.1 – Outline

Source: Developed for this Research

This initial chapter provides a background to the field of study and outlines the structure of the thesis. Section 1.2 provides a background to the research by describing the broad field of study. Section 1.3 presents the research problem and objectives. The research
question and research hypotheses are presented in Section 1.4 and the justification for this research is presented in Section 1.5. Section 1.6 provides an introduction to the methodology adopted and Section 1.7 provides an outline of the thesis. Section 1.8 provides definitions of the key terms used and Section 1.9 outlines the limitations. The concluding remarks for this chapter are contained in Section 1.10.

1.2 Background to the Research

Corporations have grown rapidly in size, number and influence over the last twenty-five years (Schouten 2007, p. 16) and with increased direct share ownership (Australian Stock Exchange 2004b), corporate governance is now of greater importance. The ASX 2013 share ownership study found that in September to November 2012, '6.68 million people, or 38% of the adult population', participated in the Australian share market directly or indirectly (ASX 2013, p. 3).

Since the high profile corporate collapses in 2001 and 2002 (like those of Enron, WorldCom in the US and HIH, One.Tel, and Pasminco in Australia) (Clarke, Dean & Oliver 2003; Farrar 2008; Milne 2002; Munro & Buckby 2008), governments, regulators, corporations and investors have considered the weaknesses in the corporate governance systems (Durden & Pech 2006, p. 84). Vast amounts of effort worldwide through regulations, reports and recommendations have been commissioned to create corporate governance best practice (Granatham 2004; Smallman 2007).

Figure 1.2 below graphically depicts the structure of corporate governance in Australia (Farrar 2008, p. 375).
The Australian corporate governance regulatory framework is graphically depicted in Figure 1.3. The elements (Legislation, ASX, Australian Accounting Standards, Codes of Conduct and Australian Auditing Standards) interact and link together in the pursuit of regulating corporate governance in Australia.
The Australian regulatory framework is a combination of mandatory obligations and less stringent recommended guidelines. The present structure exists as a result of necessities brought about by the Commonwealth’s broad legislative power under the Constitution (Redmond 2005, p. 55). The current Australian regulatory structure promotes uniformity of corporate regulation and economies of scale in national law making and enforcement (Redmond 2005, p. 56).

The implementation of corporate governance reforms, and the various aspects of these reforms, have been rigorously studied to determine whether they improve the economic performances of corporations (Dey 2008). The results in theory and research are both mixed and contentious (Dey 2008; Psaros 2009).

It has been argued that good corporate governance practice either improves financial performance or restricts financial performance (Psaros 2009, p. 31). Corporate governance advocates claim that good corporate governance policies are associated with improvements in performance as a result of ‘improved control and better management practices’ (Turley & Zaman 2004, p. 309). These claimed benefits extend to economic growth and reduced risk of fraud and corporate collapse (Bosch 1995a, p. 272).

Opponents, on the other hand, suggest that over-regulation may distract or hinder management in their performance and could be as dangerous as under-regulation (Durden & Pech 2006, p. 85 & 89). Sir Richard Branson found that ‘excessive corporate governance’ hindered his decision making and slowed down 'his ability to make things happen' (Solomon 2007, p. 70).

The ASX Corporate Governance Council’s ‘Principles of Good Corporate Governance and Best Practice Recommendations’ contain ten core recommended principles of best practice (ASX Corporate Governance Council 2003). The ASX (2003) acknowledged that the ASX Corporate Governance Council’s recommendations cannot be enforced and will not prevent corporate failure or mistakes, however, pointed out that they do provide guidance to reduce the risk of problems and enhance performance and accountability (ASX Corporate Governance Council 2003, p. 3).

The 2003 audit committee requirements recommended by the ASX Corporate Governance Council are contained in Table 1.1:
Table 1.1 – 2003 ASX Recommendations on Audit Committees

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<td><strong>Recommendation 4.2</strong></td>
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</tr>
<tr>
<td>(The 2007 &amp; 2010 Versions renamed as Recommendation 4.1) and (The 2014 Version grouped Recommendation 4.2 and 4.3 by listing them all under Recommendation 4.1).</td>
<td>The board should establish an audit committee.</td>
</tr>
<tr>
<td><strong>Recommendation 4.3</strong></td>
<td></td>
</tr>
</tbody>
</table>
| (The 2007 & 2010 Versions renamed as Recommendation 4.2) and (The 2014 Version grouped Recommendation 4.2 and 4.3 by listing them all under Recommendation 4.1). | Structure the audit committee so that it consists of:  
  ✔ only non-executive directors; and  
  ✔ a majority of independent directors; and  
  ✔ an independent chairperson, who is not chairperson of the board; and  
  ✔ at least three members. |

**Source:** ASX Corporate Governance Council 2003, pp. 29-30

In 2007 and further in 2010, the ASX Corporate Governance Council repeated the above recommendations in subsequent versions by renaming Recommendation 4.2 as Recommendation 4.1 and Recommendation 4.3 as Recommendation 4.2 (ASX Corporate Governance Council 2007, 2010). The 2014 version renamed Principle 4 as ‘Safeguard Integrity in Corporate Reporting’ and simplified the previous requirements by listing them all under Recommendation 4.1 (ASX Corporate Governance Council 2014).

The ASX reforms are further detailed in Section 2.2.4.2. To provide consistency, this thesis will use the 2003 ASX Recommendations in which the recommendation later became Recommendation 4.2 is referred to as Recommendation 4.3.

### 1.3 The Research Problem and Objectives

The objective of this study is to determine whether compliance or non-compliance of ASX Recommendation 4.3 as part of Australia’s corporate governance reforms is related to the performance of corporations measured by accounting methods and shareholder value methods. In order to investigate this matter, companies operating in the materials sector and ranked in the top 500 companies listed on the ASX are analysed.
The research problem is stated as: Is there any relationship between compliance with ASX Recommendation 4.3 and corporate performance (for corporations operating in the materials sector that are ranked in the top 500 companies listed on the ASX)?

This research is designed to provide a baseline starting point, which will be used to measure if any relationship exists between those corporations studied and corporate performance. Millstein and MacAvoy (1998, p. 1318) argue that ‘correlation between governance and performance does not prove causation’ and that causation maybe impossible to establish. This research acknowledges that other variables in a corporation's operations and environment may also have either a direct or indirect impact on corporate performance.

1.4 Research Question and Hypotheses

The research question is designed to provide a framework that directs the data collection and delimits the scope of the research in order to determine whether any relationship exists in corporations that comply and those that do not comply with ASX Recommendation 4.3 and corporate performance (Punch 1998). The research question is:

RQ. Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, do those that comply with ASX Recommendation 4.3, achieve higher corporate performance?

In parallel with the research question set out above, the null hypothesis (H0) and alternative hypothesis (H1) are:

H0. Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, there is no significant difference in corporate performance between those corporations that do not comply with ASX Recommendation 4.3 and corporations that do comply.

H1. Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, there is a significant difference in corporate performance between those corporations that do not comply with ASX Recommendation 4.3 and corporations that do comply.
1.5 Justification for the Research

The spate of high profile corporate collapses in 2001 and 2002 (like those of Enron and WorldCom in the US and HIH, One.Tel, and Pasminco in Australia) placed unprecedented worldwide focus on corporate governance reforms (Clarke, Dean & Oliver 2003; Farrar 2008; Milne 2002; Munro & Buckby 2008). Governments, regulators, corporations and investors have considered the weaknesses in corporate governance systems as contribution to these corporate failures (Durden & Pech 2006, p. 84). Extensive worldwide effort through reports and recommendations have been commissioned to identify and promulgate corporate governance best practice (Grantham 2004; Smallman 2007).

The ASX Corporate Governance Council claims that its recommendations will provide guidance to reduce risk and enhance performance and accountability (ASX Corporate Governance Council 2003). Corporate governance reforms, and the various aspects of those reforms have been rigorously studied to determine whether they improve the economic performance of corporations (Dey 2008). Maher and Anderson (1999) argue that corporate governance does have an impact on performance which is why policy makers are concerned with the topic and in likelihood will reduce political costs associated with corporate failure.

There are three main justifications for this research. The first is that studies (Al-Matari et al. 2012; Bozec 2005; Dulewicz & Herbert 2004; Hamdan, Sarea & Reyad 2013; Klein 1998; Lama 2011; McKnight et al. 2009; Reddy, Locke & Scrimgeour 2010, 2011; Vafeas & Theodorou 1998; Weir & Laing 2001) which have examined the correlation between audit committees and corporate performance have been limited and inconclusive (Turley & Zaman 2004, p. 322). Secondly, this study aims to make a contribution to the body of knowledge (Remenyi et al. 1998; Whetten 1989) on corporate governance reforms and the implications in practice. This thesis further seeks to contribute to knowledge in this area by providing data for shareholders, legislators, regulators, directors and stakeholders which will enable them to improve governance practice.

There is a gap in the current literature because it does not adequately address the research problem from an Australian perspective. The researcher has not discovered any peer-reviewed research which assesses whether there is any relationship between the ASX Recommendations on audit committees and the performance of companies listed on the ASX operating in the materials sector.
1.6 Methodology

The four scientific paradigms applicable to social research: positivism, realism, critical theory and constructivism are considered in Section 3.3. In order to justify the appropriate paradigm and develop a suitable methodology, the ontological and epistemological positions held by the researcher were determined.

The three main research types of descriptive, empirical explanatory and causal research were also considered together with the use of qualitative and quantitative research approaches. In light of the research problem, research objectives, research question and research hypotheses, a positivist paradigm and empirical exploratory research were selected for this study. The data acquisition does not require access to human respondents or subjects and the researcher was independent of what was being observed. Therefore, he did not influence, and was influenced by the data.

The research method enabled the data to be measured using a quantitative approach. This study utilised secondary numerical and historical data to answer the research question and test the research hypotheses utilising a quantitative approach which was representative of the positivist paradigm.

The study sample included 54 corporations and the data for each was derived from the annual reports of corporations for the years ended 30 June 2006, 30 June 2007 and 30 June 2008. The data includes board characteristics, audit committee characteristics and financial data for corporations which were operating in the materials sector and which were ranked in the top 500 companies (by market capitalisation) listed on the ASX.

In order to provide consistency, validity and reliability and decrease the complexity of this study, only corporations operating in the same Global Industry Classification Standard (GICS) sector were included in this study. Table 1.2 lists the variables in this study.
Table 1.2 – Variables Studied

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Corporate Performance Dependent Variables (Accounting Measures)</th>
<th>Corporate Performance Dependent Variables (Shareholder Measures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance with ASX Rec. 4.3. (COMPLY)</td>
<td>Reported Net Profit $mil – (RNP)</td>
<td>+/- Market % – (M)</td>
</tr>
<tr>
<td>The size of the board (TOTALDIR)</td>
<td>Return on Assets % – (ROA)</td>
<td>Price / Earnings Ratio – (PER)</td>
</tr>
<tr>
<td>Gross Domestic Product (GDP)</td>
<td>Return on Equity % – (ROE)</td>
<td>Price / Cash Flow Ratio – (PCFR)</td>
</tr>
<tr>
<td>All Ordinaries Index (ALLORDS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEO Remuneration (CEOPAY)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The independent variables were drawn from annual reports of corporations for the years ended 30 June 2006, 30 June 2007 and 30 June 2008 and only corporations with consistent structure, available financial data and had a 30 June reporting date for the three years were selected to form part of the study. The model assumes no lag in design as the corporate performance dependent variables are measured over the same time period as the independent variables.

This data was derived predominantly from the annual reports of corporations for years ended 30 June 2006, 30 June 2007 and 30 June 2008 and from the 2009 publication ‘Morningstar Shareholder, The Handbook of Australia’s Top 500 Companies’. The data collected included board characteristics, audit committee characteristics and financial data for the 97 corporations ranked in the top 500 companies (by market capitalisation) listed on the ASX operating in the materials sector.

Of the 97 material sector companies reviewed, 43 were excluded and the data for the remaining 54 corporations formed part of this study. The software used for conducting panel data estimation was EViews Student Version 8.
1.7 Outline of the Thesis

This thesis is structured using Perry's (2002) five chapter thesis model which is depicted in Figure 1.4 below.

**Figure 1.4 – Five Chapter Thesis Model Adopted for this Thesis**

![Five Chapter Thesis Model](image)

**Chapter 1: Introduction**
- The Research Problem
- Overview of the research

**Chapter 2: Literature Review**
- Justification of the research problem and research gap

**Chapter 3: Methodology**
- Justification of the research paradigm
- Detailed description and justification of the procedures followed

**Chapter 4: Analysis of Data**
- Analysis of Responses
- Testing of Relationships

**Chapter 5: Conclusions and Implications**
- Research problem resolved
- Implications and contributions

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**Source: Barns 2002, p. 11 and Perry 2002, p. 5**

**Chapter 1 – Introduction.** This chapter provides a broad background to the field of study and further outlines the structure of the thesis. This chapter includes a background to the research by describing the broad field of study. It presents the research problem, research objectives, research question and research hypotheses, as well as an introduction to the methodology adopted. It also presents an outline of the thesis. Definitions of the key terms used are presented, and the limitations are outlined.
Chapter 2 – Literature Review. This chapter provides a review of the relevant literature in the four parent disciplines. The first is corporate governance, and the coverage of this topic includes an overview and brief history of corporate governance, corporate governance theory, the importance of corporate governance and corporate governance reforms in Australia.

The second parent discipline is corporate boards. This topic is outlined by providing an overview of the roles and functions of corporate boards, the attributes of a corporate board, a discussion of the effect of board size, board diversity and the delegation of authority to board committees.

The third parent discipline of company directors is addressed by providing an overview of company directors, their duties, the roles and responsibilities of executive directors, non-executive directors and the independence of non-executive directors.

The final parent discipline of corporate performance is outlined by providing an overview of the literature with respect to corporate boards and corporate performance and the independence of directors and corporate performance.

The immediate discipline is audit committees. The section on this topic outlines codes and guidelines, audit committee roles and responsibilities, the independence of audit committees, the effectiveness of audit committees, audit committee best practice and the relationship between audit committees and corporate performance. The research gap in the literature is described.

Chapter 3 – Methodology. This chapter builds on the methodology outlined in Section 1.6 of this chapter. The chapter restates the research objectives, research problem, research question and research hypotheses. The various paradigms which may be applied are presented and a justification for choosing the positivist paradigm is provided. The types of research considered are presented and a justification for using descriptive research is provided.

The research methodology used and the justification for choosing a quantitative approach is outlined together with the elements of research design. The data collection methods and data analysis are described. Quality considerations are discussed, and ethical considerations are explained.
Chapter 4 – Data Analysis. This chapter presents the data analysis and a commentary on the results without drawing general conclusions or comparing the results to previous research (Perry 2002, p. 34).

Chapter 5 – Conclusions and Implications. This chapter concludes the thesis by drawing conclusions from the data analysis presented in Chapter 4 in answer to the research question and the testing of the hypotheses. The chapter further outlines the implications for theory, policy and practice, the limitations of the research and implications for further research.

1.8 Definitions

In order to clarify the meaning of the various terms used in this thesis, the following definitions in alphabetical order have been adopted (Sadler & Tucker 1981). The definitions are provided for convenience and are also contained in the body of the thesis.

**Audit Committee** 'is a sub-committee of the board of directors', with delegated authority from the board (Spira 1999b, p. 231; Turpin & DeZoort 1998, p. 35).

**Board Diversity** relates to the composition of the board in regard to: the directors' gender, age, ethnicity, industry background and experience; board size and director independence (Moodie 2001, p. 1 & 17; Van der Walt et al. 2006, p. 136).

**A Corporate Board** is a group of directors appointed by the shareholders to act as their representatives to govern the corporation (Adams, Grose & Leeson 2004, p. 284).

**Corporate Governance** The following 2003 ASX definition of corporate governance is adopted for this thesis:

> Corporate governance is the system by which companies are directed and managed. It influences how the objectives of the company are set and achieved, how risk is monitored and assessed, and how performance is optimised (ASX Corporate Governance Council 2003, p. 3).

**Corporate Performance** can be measured using financial accounting methods or by reference to stock market returns (Dalton et al. 1998, pp. 274-275; Dalton & Kesner 1985, p. 753). This thesis aims to measure corporate performance in both these two categories.
The variables used for each are outlined in Table 1.3 and each of the variables is defined in Section 3.6.3.

Table 1.3 – Corporate Performance Variables

<table>
<thead>
<tr>
<th>Corporate Performance Accounting Measures</th>
<th>Corporate Performance Shareholder Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported Net Profit $mil – (RNP)</td>
<td>+/- Market – (M)</td>
</tr>
<tr>
<td>Return on Assets % – (ROA)</td>
<td>Price / Earnings Ratio – (PER)</td>
</tr>
<tr>
<td>Return on Equity % – (ROE)</td>
<td>Price / Cash Flow Ratio – (PCFR)</td>
</tr>
</tbody>
</table>

**Directors** are individuals appointed by shareholders to sit on the boards that are entrusted to govern the corporation (Proctor & Miles 2002, p. 25).

**Executive Director** is a full-time employee of the company responsible for the day-to-day management of the corporation with defined roles and responsibilities (Weir & Laing 2001, p. 87).

**Non-Executive Directors** also referred to as ‘part-time’, ‘independent’ or ‘outside directors’, act as advisers to management and ensure that the corporation is run in the best interests of the shareholders (Barratt & Korac-Kakabadse 2002, p. 33; Houston & Lewis 1992, p. 4).

**Successful Boards** ‘manage change well, have drive to succeed, assume responsibility for their actions, concentrate on strategic and business development, have a clear vision, inspire, energise, motivate and avoid rhetoric and hype’ (Coulson-Thomas 2005, pp. 67-69).

### 1.9 Limitations

This study required the review of the literature in a variety of fields encompassing corporate governance, corporate boards, company directors, audit committees and corporate performance. The limitations of the research are outlined in Section 5.6. They relate to: the study sample, the data and time period and the variables used in this study.
1.10 Conclusion

This chapter provides an overview to the field of study and outlines the structure of the thesis. This chapter includes an introduction, provides a background to the research by describing the broad field of study, and presents the research problem, objectives, research question and research hypotheses. The methodology is outlined and definitions of the key terms used are presented.
Chapter 2 – Literature Review

2.1 Introduction

This chapter comprises 8 sections, as depicted in Figure 2.1.

Figure 2.1 – Chapter 2 Outline

Source: Developed for this Research

This chapter provides an analysis of the current state of knowledge in relevant areas of literature in order to provide a wider perspective of the research objectives, research problem, research question and research hypotheses. (Cavana, Delahaye & Sekaran 2001, pp. 4-5; Cooper & Schindler 1998; Saunders, Lewis & Thornhill 2000; Van der Velde, Jansen & Anderson 2004; Webster & Watson 2002).
Section 2.2 introduces corporate governance, the first of four parent disciplines and provides an overview and brief history of corporate governance, corporate governance theory, the importance of corporate governance and corporate governance reforms in Australia.

Section 2.3 presents the second parent discipline of corporate boards and provides an overview of the roles and functions of corporate boards, and the attributes of a corporate board. It discusses the effect of board size, and board diversity and the delegation of authority to board committees.

The third parent discipline of company directors is outlined in Section 2.4 and provides an overview of company directors, and their duties, the roles and responsibilities of executive directors, and non-executive directors and the independence of non-executive directors.

Section 2.5 presents the final parent discipline of corporate performance and provides an overview of the literature with respect to corporate boards and corporate performance and the independence of directors and corporate performance.

Section 2.6 presents the immediate discipline being audit committees and outlines audit committee codes and guidelines, audit committee roles and responsibilities, the independence of audit committees, the effectiveness of audit committees, audit committee best practice and the relationship between audit committees and corporate performance.

Section 2.7 provides an outline of the research gap in the literature and the concluding remarks for this chapter are contained in Section 2.8.

### 2.2 Parent Discipline One: Corporate Governance

This section introduces corporate governance, the first of the four parent disciplines. It provides an overview and history of corporate governance, corporate governance theory, the importance of corporate governance and corporate governance reforms in Australia.

#### 2.2.1 Overview and Brief History of Corporate Governance

The word ‘governance’ originates from the Latin word ‘gubernare’ (Farrar 2001, p. 3). Governance is also used to describe the act of governing (Colley et al. 2005, p. 2) which, comes from the old French word ‘gouvernance’, meaning control (Farrar 2001, p. 3). It
Chapter 2 – Literature Review

also has the meanings of ‘to rule with authority, to sway, rule, influence and regulate’ (Davies 1999, p. 3). The governance of corporations commenced when legislation and regulation were required after the incorporation of limited liability companies (Vinten 1998, p. 419). The term ‘corporate governance’, was first introduced by Richard Eells in 1962 (Farrar 2001, p. 3). It refers to how corporations are held accountable (Adams, Grose & Leeson 2004, p. 273). The term ‘corporate governance’ is yet to attain a universally agreed definition. Many attempts have yielded varying versions causing some confusion as to its real meaning (McConvill 2004, p. 1). The following 2003 ASX definition of corporate governance is adopted for this thesis:

*Corporate governance is the system by which companies are directed and managed. It influences how the objectives of the company are set and achieved, how risk is monitored and assessed, and how performance is optimised.*

*(ASX Corporate Governance Council 2003, p. 3)*

In essence, corporate governance refers to the control of corporations and ‘systems of accountability by those in control’ (Farrar 2003, p. 66). The measure of corporate governance effectiveness is whether the organisation has achieved its purpose (Colley et al. 2005, p. 4). Corporate governance, therefore, is not an end in itself, but a means by which each corporation strives to achieve its objectives through the structures and processes it has in place (Van den Berghe & Levrau 2003, p. 72). According to Bosch (1995a, p. 2), there is no simple formula or single approach to good governance that applies to all companies. The OECD also admits there is no single model for good corporate governance (OECD 1999, p. 12). Corporate governance is not just about rules and regulations; it’s about economic and social well-being and the equitable distribution of wealth through accountability and transparency (Clarke 2004, p. 3).

### 2.2.2 Corporate Governance Theory

Corporations have grown in both size and number over the last twenty-five years, and with increased direct investment, some of these corporations are larger than some smaller sovereign countries and have a large impact on the world economy (Schouten 2007, p. 16). The size and impact of large organisations has led to intense debate about whose interests these corporations are serving and who is controlling them (Letza et al. 2008; Letza, Sun & Kirkbride 2004). The following sections describe contrasting theories of corporate governance. The differences between the perspectives described relate to the objectives of the corporation (Letza, Sun & Kirkbride 2004).
2.2.2.1 Shareholder Theory

The shareholder perspective views corporations as profit maximising entities operating in the shareholders’ interests (Letza, Sun & Kirkbride 2004, p. 243). In contrast, the stakeholder perspective views corporations in terms of the broader interests of their wider stakeholders (Letza, Sun & Kirkbride 2004, p. 243). Shareholder perspective theorists believe that conflicts of interest can occur between shareholders and the management of the company and they suggest that managers who are not independent are likely to pursue their own self-interest at the expense of shareholders (Van den Berghe & Levrau 2004, p. 463).

Corporations have been governed, particularly in the US and UK, with an exclusive focus on shareholder value, entrenching it as a principle of corporate governance (Clarke 2004, p. 290). Shareholders claim that they form corporations by collectively investing in a common goal (Bosch 2002, p. 270) and that the corporation’s primary obligation by law is to act in the best interests of its shareholders rather than the interests of the community (Horrigan 2002, p. 528; Stranden 2005). Shareholder theory is based on a legal principle that the residual interest in the net assets of the company belong to the shareholders, the directors are agents and the rights of stakeholders are ‘strictly limited to statutory, contractual and common law rights’ (Clarke 2004, p. 193). Redmond (2005, p. 225) supports this view by stating that ‘corporate governance is concerned with the relations between the shareholders…directors and senior managers’.

A company is defined to mean ‘shareholders as a whole’ and its meaning is only extended when a company becomes insolvent (Wilson 2005, p. 278). Company directors are under a statutory duty to act in the best interests of the company, meaning the shareholders under s181 of the Corporations Act 2001 (Cth) (Wilson 2005, p. 278). The decision in Parke v Daily News Ltd illustrates that actions other than those taken for the benefit of shareholders are not justified as being within the law (Wilson 2005, p. 279). In Woolworths v Kelly Mahoney J stated that a company ‘may be generous or do more than it need do only if, essentially, it be for the benefit of or for the purpose of the company’ (Wilson 2005, p. 278).
2.2.2 Stakeholder Theory

Stakeholder theory recognises that many corporate relationships exist, and are not limited to those between managers and shareholders (Psaros 2009). The rationale is that ‘all stakeholders are impacted upon and also impact on the corporation’ (Psaros 2009, p. 15). A stakeholder can be defined as ‘any party that has an interest in property, an action or undertaking, or a decision made by the corporation’ (Shailer 2004, p. 14) and ‘any group or individual who can affect, or is affected by, the achievement of the organisation’s objective’ (Freeman 1984, p. 46).

Stakeholders comprise both ‘fiduciary and silent stakeholders’ (Simmons 2004, p. 606). Stakeholders are further categorised as legal (contractual) stakeholders who are ‘shareholders, employees, customers, distributors, suppliers, lenders’ and general and social (community) stakeholders who are ‘consumers, regulators, government, pressure groups, the media, local communities, general public and the environment’ (Clarke 2004, pp. 194-195). The stakeholder perspective sees the corporation as a social entity (Letza, Sun & Kirkbride 2004, p. 250) and argues that its decision-making should reflect the ‘rights and responsibilities of stakeholders’ (Shailer 2004, p. 17). The stakeholder theory of corporate governance seeks to explain how a corporation manages its relations with stakeholders (Law 2011; Mason, Kirkbride & Bryde 2007).

The OECD in its functional definition of corporate governance supported the stakeholder perspective to facilitate the ‘stability and equity of society’ (Clarke 2004, pp. 1-2), which is vital for investment and economic growth (Farrar 2003, p. 67). Other proponents of this view include Sir Adrian Cadbury. Cadbury, advocated that the aim of corporate governance is to ‘align as nearly as possible the interests of individuals, corporations and society’ (Clarke 2004, p. 2).

Supporters of the stakeholder perspective argue that corporations should not be viewed as a ‘bundle of assets’ that belongs to shareholders for profit maximisation (Clarke 2004, p. 11), but a way of ‘delivering wider outputs to a range of stakeholders’ in a manner which ‘emphasises corporate efficiency in a social context’ (Letza, Sun & Kirkbride 2004, p. 244). The corporation cannot achieve its goals without considering and managing the relationships and interests of stakeholders (Psaros 2009).
2.2.2.3 Agency Theory

Agency theory is the most common and prominent theory in corporate governance literature (Psaros 2009). Agency theory emanates from the work of Berle and Means (1932) which highlights the issue of separation of ownership and control (Psaros 2009). Agency theory refers to the relationship between agents (managers) and principals (shareholders) where the principals direct work to the agents who perform the work (Eisenhardt 1989). It is emphasised that to eliminate agency problems, the principals need to align the self-interest of managers with the interests of shareholders (Rubach & Picou 2005).

Eisenhardt (1989, p. 58) suggests that there are two types of agency problems. The first type occurs when: ‘(a) The desires or goals of the principal and agent conflict; and (b) it is difficult or expensive for the principal to verify what the agent is actually doing’ (Eisenhardt 1989, p. 58). The second type is related to risk sharing between the principal and agent (Eisenhardt 1989). Fama and Jensen (1983a) suggest that these problems occur because of the costs involved in writing and enforcing contracts. As agents do not share the majority of the wealth effects, it is assumed that they will place their own interests above those of the shareholders (Psaros 2009). In agency theory, ‘corporate governance structures, policies and relationships are considered important mechanisms to help overcome agency problems’ (Psaros 2009, p. 15).

In line with agency theory, shareholders aim to reduce agency problems by creating independent boards and independent audit, remuneration and nomination committees (Psaros 2009, pp. 14-15). Agency theory is aligned with corporate governance reforms adopted in Australia in an attempt to minimise the conflicts that may arise through governance codes and regulation (Lama 2011; Psaros 2009). Lama (2011, p. 15) argues that the ‘presence of an audit committee potentially and significantly reduce the agency costs’ by increasing transparency. This is achieved by the audit committee monitoring management and placing pressure on them to make the right decisions that are in the best interests of shareholders and by discouraging selfish decisions that are likely to be scrutinised (Lama 2011, p. 15).
2.2.2.4 Stewardship Theory

Stewardship theory adopts a psychological and sociological perspective of human behaviour and rejects the premise that all decisions are driven by economic considerations (Psaros 2009). Their premise is that individuals are motivated by non-economic means such as acceptance, recognition, personal growth, and the need to gain satisfaction through their performance (Psaros 2009). Stewardship theory recognises managers as good stewards who are unlikely to misappropriate company resources for self-interest because they are motivated by non-financial values (Van den Berghe & Levrau 2004, p. 463).

Stewardship theory considers that performance is enhanced through good stewardship and the empowerment of managers (Psaros 2009; Royae & Dehkordi 2013). Stewardship theory holds that performance variations may arise due to structural constraints and not because of insufficient rewards (Psaros 2009, p. 19). Stewardship theory adopts the view that independence of director representation should be minimised and asserts that the duality of the chief executive officer and board chair roles should be unified to provide a strong relationship (Psaros 2009). It further holds that independent representation on boards and the existence of sub-committees is counter-productive (Psaros 2009, p. 19). Stewardship theory places no value in independent directors and subcommittees and considers them to be a hindrance (Psaros 2009, p. 20).

2.2.2.5 Resource Dependency Theory

Resource dependency theory relies on the corporations ability to control and utilise its external resources to maximise its potential to achieve its goals (Psaros 2009). The director’s objectives are to link external resources such as specialist information, skills, access to key suppliers, external groups and government policy makers to the organisation (Psaros 2009). Similarly to stewardship theory, resource dependency theory assumes that independent directors and sub-committees hinder good corporate governance (Psaros 2009, p. 20). Resource dependency theory assumes that the most significant asset of the board is not independence but the individual skills and external contacts of the directors (Psaros 2009). Resource dependency theory see independent directorship or audit committees as a non-issue and places no value in their existence (Psaros 2009, p. 20).
2.2.3 The Importance of Corporate Governance

An appreciation of the nature and role of corporate governance is required in order to understand its importance (Ardalan 2007). It is widely acknowledged that ‘good governance’ is widely respected, despite involving diverse interpretation, disciplines and approaches (Keasey, Thompson & Wright 2005, p. 1). Justice Owen, of the 2003 HIH Royal Commission, stated that good corporate governance practices should not adopt a ‘one size fits all approach’, through heavy regulation that prevents companies from implementing practices that are not in the best interests of individual companies (McConvill 2004, p. 4). The OECD has suggested that there is a link between good corporate governance, investor confidence and economic growth through the provision of reliable and relevant corporate information (Adams, Grose & Leeson 2004; Farrar 2003, pp. 67-68). Bosch (1995a, p. 271) argues that the risk of fraud and corporate collapse are reduced in a well governed company and the creation of wealth is likely to be increased through improved performance (Bosch 1995a, p. 272).

The importance of protecting investors from corporate collapses has increased due to the surge in Australian direct share ownership (Bosch 1995a, p. 271). A 2013 ASX share ownership study found that in September to November 2012, ‘6.68 million people, or 38% of the adult population’, participated in the Australian share market directly or indirectly (ASX 2013, p. 13). The high rate of private share ownership in Australia adds fuel to the debate over whether corporations should focus on corporate governance practices or maximise profits to shareholders. McConvill (2004, p. 4) asks, ‘is implementing good corporate governance practices a necessary ingredient for corporate success, or merely a distraction from the real business of the company?’. Collapses of corporations such as WorldCom, Ansett Airlines and Pasminco all of which had good corporate governance practices in place, indicate that good practices do not guarantee success (McConvill 2004, p. 4).

Many Australian corporations are voluntarily engaging in corporate social responsibility to protect their brand name and promote themselves as good corporate citizens because they have ‘suffered or are vulnerable to negative community sentiment’ (Redmond 2005-2006, p. 8). Studies associated with the correlation between corporate social responsibility and financial performance have also produced mixed results. Cochran and Wood (1984, p. 43) found ‘weak evidence of a positive correlation between corporate social responsibility and financial performance’. Aras, Aybars and Kutlu (2010, p. 229) did not
find any ‘significant relationship with corporate social responsibility and financial performance / profitability’.

2.2.4 Corporate Governance Reforms in Australia

In 2001, the spate of high profile corporate collapses like those of Enron and WorldCom in the US and HIH in Australia placed unprecedented worldwide focus on corporate governance reforms (Farrar 2008; Milne 2002, p. 1). As a result of the significant instances of misconduct and corporate failure, the reforms aimed at restoring public confidence in corporate Australia (Blake Dawson Waldron 2004, p. 1). The Commonwealth Government in consultation with the Australian Securities and Investments Commission (ASIC) (Tomasic 2001), ASX, accounting and legal professions together with consultative bodies, have been progressively reforming Australia’s corporate law (Stretton 2004, p. 28).

2.2.4.1 Legislative Reforms

The Commonwealth Government’s corporate and financial sector regulation reforms led to the development of the Corporate Law Economic Reform Program (CLERP) (Ford, Austin & Ramsey 2003, p. 51). CLERP made significant changes to corporate regulation in areas of ‘corporate governance, director’s duties, corporate fundraising, takeovers and accounting standards’ (Hill & Koeck 2000, p. 18).

The first four and part of the fifth CLERP papers were ‘reflected in the Corporate Law Economic Reform Act 1999 (Cth) (CLERPA), the sixth paper led to the Financial Services Reform Act 2001 (Cth)’ (Ford, Austin & Ramsey 2003, p. 51). The federal government released the discussion paper ‘Corporate Disclosure: Strengthening the Financial Reporting Framework’ in September 2002 (Department of Treasury 2002, p. 11). The Commonwealth government enacted the Corporate Law Economic Reform Program (Audit Reform and Corporate Disclosure) Act 2004 (Cth) (CLERP 9 Act) which received Royal Assent on 30 June 2004 (Blake Dawson Waldron 2004, p. 1). The CLERP 9 Act represents the Commonwealth government’s legislative response to the following initiatives and reports:


• ‘The ASX’s establishment of the Corporate Governance Council and its code of Principles of Good Corporate Governance and Best Practice Recommendations’ (Allens Arthur Robinson 2004b).

• ‘The ASX’s Listing Rule amendments’ (Allens Arthur Robinson 2004b).


• The UK’s Higgs Report on non-executive directors and the Smith report on the audit function and proposed changes to the Combined Code’ (Allens Arthur Robinson 2004b).

The objectives of the CLERP 9 Act reforms aim to ‘improve the operation of the market by promoting transparency, accountability and shareholder activism’ by legislating in the areas of ‘audit reforms; financial reporting; proportionate liability; enforcement; directors and executive remuneration; continuous disclosure; shareholder participation; and the management of conflicts of interest by financial services licensees’ (Parker & Porter 2004, p. 363). The audit reform provisions of the CLERP 9 Act provide for auditor independence, employment relationship restrictions, mandatory rotation of significant persons involved in the audit function of a company, ensuring that fees paid to auditors are disclosed in the company’s annual reports and a statement that the directors are satisfied that non-audit services provided have not jeopardised audit independence (Allens Arthur Robinson 2004c).

The continuous disclosure provisions of the CLERP 9 Act are ‘regulated by the ASX and defined within the ASX Listing Rules’ legislated under Chapter 6CA of the Corporations Act 2001 (Cth) (Allens Arthur Robinson 2004d). The Australian Securities and Investment Commission (ASIC) is the federal government's supervisory authority and it administers the continuous disclosure obligations under Chapter 6CA of the Corporations Act 2001.
(Cth) to ensure ‘integrity of the market through transparency and equal access to information’ (Australian Securities & Investment Commission 2004, p. 4).

The **Company Law Review Act 1998** (Cth) passed by the Commonwealth Parliament in June 1998, amended the then Corporations Law. The primary reforms contained in the Act were directed towards financial reporting and audit requirements for ‘all disclosing entities, public companies and large proprietary companies’ with respect to annual reports (Parker & Porter 2004, p. 328). The Commonwealth government also enacted two principal statutes, the **Corporations Act 2001** (Cth) and the **Australian Securities and Investment Commission Act 2001** (Cth) (ASIC) (Ford, Austin & Ramsey 2003, p. 51). The **Corporations Act 2001** (Cth) conferred power to the Commonwealth, which simplified the Commonwealth's power to legislate extra-territorially (Ford, Austin & Ramsey 2003, p. 52). The **Corporations Act 2001** (Cth) prescribes reporting requirements for proprietary companies large and small, disclosing entities and public companies (Parker & Porter 2004, p. 327).

The **Australian Securities and Investment Commission Act 2001** (Cth) replaced the **Australian Securities Commission Act 1989** (Cth), which is the Commonwealth government’s main legislative regulatory authority for corporations (Lipton & Herzberg 1999, p. 14). The Federal Parliament also passed the **Australian Prudential Regulation Authority Act 1998** (Cth) creating a national regulator of prudential institutions known as Australian Prudential Regulation Authority (APRA) (Parliament of Australia 2005, p. 6). APRA’s purpose is to ensure that monetary deposit takers, insurance companies and superannuation fund managers maintain a level of financial soundness (Parliament of Australia 2005, p. 6). Through the creation of ASIC and APRA in conjunction with the already established Reserve Bank of Australia, the Australian Government adopted ‘the twin peaks’ model of financial regulation (Cooper 2006, pp. 2-4).

The Australian Government’s legislative reforms reflect the importance of corporate regulation for investors, depositors and creditors (Parliament of Australia 2005, p. 7). Sarre (2004, p. 525) argues that regulatory provisions should be ‘affordable, effective and respected’. The effectiveness of corporate law should be measured by how corporations become self-enforcing (Tomasic 2001, p. 24) and corporate law should not be changed until such time as the existing laws have had time to be tested in appropriate litigation (Baxt 1991, p. 283).
2.2.4.2 ASX Reforms

The ASX was formed in 1987, incorporating six state based exchanges for equities, derivatives and fixed interest securities (ASX 2006, p. 1). The primary objective of the ASX is to foster an informed, fair and internally competitive financial securities market (Parker & Porter 2004, p. 340).

On 1 August 2002, the ASX established the ASX Corporate Governance Council, a gathering of twenty-one organisations representing the Australian stakeholder community that aimed at developing a ‘corporate governance and disclosure framework’ enhancing credibility and transparency through Australian capital markets (KPMG 2003a, p. 1). In March 2003, The ASX Corporate Governance Council (2003) released its ‘Principles of Good Corporate Governance and Best Practice Recommendations’ which contained ten core recommended principles of best practice guidelines. These are summarised in Table 2.1 and are designed to produce ‘efficiency, quality or integrity outcomes’ (ASX Corporate Governance Council 2003; Baxter 2010).
Table 2.1 – 2003 ASX’s Essential Corporate Governance Principles.

<table>
<thead>
<tr>
<th>No.</th>
<th>Principles – A company should:</th>
</tr>
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</table>
| 1.  | Lay solid foundations for management and oversight.  
     | Recognise and publish the respective roles and responsibilities of board and management. |
| 2.  | Structure the board to add value.  
     | Have a board of effective composition, size and commitment to adequately discharge its responsibilities and duties. |
| 3.  | Promote ethical and responsible decision-making.  
     | Actively promote ethical and responsible decision-making. |
| 4.  | Safeguard integrity in financial reporting.  
     | Have a structure to independently verify and safeguard the integrity of the company’s financial reporting. |
| 5.  | Make timely and balanced disclosure  
     | Promote timely and balanced disclosure of all material matters concerning the company. |
| 6.  | Respect the rights of shareholders  
     | Respect the rights of shareholders and facilitate the effective exercise of those rights. |
| 7.  | Recognise and manage risk.  
     | Establish a sound system of risk oversight and management and internal control. |
| 8.  | Encourage enhanced performance.  
     | Fairly review and actively encourage enhanced board and management effectiveness. |
| 9.  | Remunerate fairly and responsibly.  
     | Ensure that the level and composition of remuneration is sufficient and reasonable and that its relationship to corporate and individual performance is defined. |
| 10. | Recognise the legitimate interests of stakeholders.  
     | Recognise legal and other obligations to all legitimate stakeholders. |

Source: ASX Corporate Governance Council 2003, p. 11

In addition to the above 10 key principles, the ASX Corporate Governance Council made twenty-eight separate recommendations providing commentary and guidance with respect to each principle (Allens Arthur Robinson 2004a, p. 1). The ASX (2003) acknowledged that the ASX Corporate Governance Council’s recommendations cannot be enforced and will not ‘prevent corporate failure’ or mistakes, however, they do provide guidance to reduce the risk of problems and enhance performance and accountability. The full
separate recommendations made for Principle 4 ‘Safeguard Integrity in Financial Reporting’ are outlined in Table 2.2 below:

**Table 2.2 – Principle 4 of the 2003 ASX Recommendations on Audit Committees**

<table>
<thead>
<tr>
<th>ASX Recommendation</th>
<th>Description of Recommendation</th>
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<tbody>
<tr>
<td>Recommendation 4.1</td>
<td>Require the chief executive officer (or equivalent) and the chief financial officer (or equivalent) to state in writing to the board that the company’s financial reports present a true and fair view, in all material respects, of the company's financial condition and operational results and are in accordance with relevant accounting standards.</td>
</tr>
<tr>
<td>Recommendation 4.2</td>
<td>The board should establish an audit committee.</td>
</tr>
</tbody>
</table>
| Recommendation 4.3 | Structure the audit committee so that it consists of:  
  ✓ only non-executive directors; and  
  ✓ a majority of independent directors; and  
  ✓ an independent chairperson, who is not chairperson of the board; and  
  ✓ at least three members. |
| Recommendation 4.4 | The audit committee should have a formal charter. |
| Recommendation 4.5 | Provide the information indicated in *Guide to Reporting on Principle 4*. |

*Source: ASX Corporate Governance Council 2003, pp. 29-32*

The ASX advocates that ‘the existence of an independent audit committee is recognised internationally as an important feature of a good corporate governance mechanism’ (ASX Corporate Governance Council 2003, p. 30). In addition to the ‘Principles of Good Corporate Governance and Best Practice Recommendations’, the 2003/04 financial year produced a mandatory ‘if not why not’ provision under ASX Listing Rule 4.10 forcing listed companies to declare in their annual report what recommendations they have not followed and provide reasons for not following the recommendations (Australian Stock Exchange 2004a, p. 2).
The Listing Rules 4.10 and 4.10.3 are:

**Rule 4.10** An entity must include the following information in its annual report. The information must be current at a date specified by the entity which is no more than 6 weeks before the report is sent to security holders (Australian Stock Exchange 2005, p. 413).

**Rule 4.10.3** A Statement disclosing the extent to which the entity has followed the best practice recommendations set by the ASX Corporate Governance Council during the reporting period. If the entity has not followed all of the recommendations the entity must identify those recommendations that have not been followed and give reasons for not following them. If a recommendation had been followed for only part of the period, the entity must state the period during which it had been followed (Australian Stock Exchange 2005, p. 413).

ASX Listing Rule 3.1 requires companies to provide ‘immediate’ continuous disclosure of any information that will have a material effect on the value of its securities (Australian Stock Exchange 2003b). Section 674 of the *Corporations Act 2001* (Cth) contains criminal and civil penalty provisions for non-compliance in support of ASX Listing Rule 3.1 (Australian Stock Exchange 2003b, p. 4). Listing Rule 3.1 states:

**Rule 3.1** Once an entity is or becomes aware of any information concerning it that a reasonable person would expect to have a material effect on the price or value of the entity’s securities, the entity must immediately tell ASX that information (Australian Stock Exchange 2003a, p. 302).

The ASX, through its Corporate Governance Council, commits to continuous review of the principles to ensure they are responsive to ‘local and international developments, and continue to reflect international best practice’ (ASX Corporate Governance Council 2003, p. 7). In August 2007, the ASX Corporate Governance Council fulfilled its commitment of continuous review by introducing the second edition of its ‘Corporate Governance Principles and Recommendations’ (ASX Corporate Governance Council 2007). The changes to the principles and recommendations took effect on 1 January 2008 (ASX Corporate Governance Council 2007, p. 7) and continued to be flexible non-prescriptive guidelines designed to improve market efficiency at low agency costs (ASX Corporate Governance Council 2007, p. 5; Mayne 2007, p. 5). The recommendations to Principle 4,
Safeguard Integrity in Financial Reporting remained substantially the same. They are outlined in Table 2.3 below:

Table 2.3 – Principle 4 of 2007 2nd Ed ASX Recommendations on Audit Committees

<table>
<thead>
<tr>
<th>ASX Recommendation</th>
<th>Description of Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation 4.1</td>
<td>The board should establish an audit committee.</td>
</tr>
</tbody>
</table>
| Recommendation 4.2 | The audit committee should be structured so that it:  
  ✓ consists only of non-executive directors  
  ✓ consists of a majority of independent directors  
  ✓ is chaired by an independent chair; who is not chair of the board  
  ✓ has at least three members. |
| Recommendation 4.3 | The audit committee should have a formal charter. |
| Recommendation 4.4 | Companies should provide the information indicated in the Guide to Reporting on Principle 4. |

Source: ASX Corporate Governance Council 2007, p. 11


2.2.4.3 Australian Accounting Standards

The Australian Accounting Standards were established primarily for the purpose of providing stakeholders with transparent financial information with an emphasis on complete disclosure (Australian Accounting Standards Board 1993). Section 296 of the
Corporations Act 2001 requires entities to comply with Australian Accounting Standards (Ford, Austin & Ramsey 2003, p. 494). The Australian Accounting Standards Board (AASB), created under Section 224 of the Australian Securities Commission Act 1989 is responsible for the administration of the Australian Accounting Standards (Australian Accounting Standards Board 1993, p. 9).


2.2.4.4 Australian Auditing Standards

The Corporate Law Economic Reform Program (Audit Reform & Corporate Disclosure) Act 2004 established the Auditing and Assurance Standards Board (AUASB) for the purpose of setting and improving standards and providing assistance to auditors (Australian Government 2005, p. 1). Standard AUS202, sets out the objectives of an audit, provides for the auditor to express an opinion about the financial report, and provides reasonable assurance that the report is free from material misstatement (Lipton & Herzberg 1999, p. 388). In addition, AUS202.04, provides for auditors to comply with the ethical requirements of Certified Practising Accountants (CPA) and The Institute of Chartered Accountants (ICA) (Australian Accounting Research Foundation 2002, p. 5).

A significant standard for corporate governance reform is standard AUS210 ‘Irregularities, Including Fraud, Other Illegal Acts and Errors’. This standard requires external auditors to report findings on these matters to the entity’s governing bodies, including its board of directors, management and third parties (Parker 2001, pp. 112-113).

2.2.4.5 Codes of Conduct – Australian Standards

Codes of conduct are voluntary rules or guidelines that provide corporations with self-regulatory principles of good practice. These codes of conduct have arguably provided stakeholders with benefits by widening corporate responsibility (Utting 2004, p. 1). In
addition to company codes of conduct, Standards Australia provides guidelines for quality standards to over 1.2 million private and public organisations (Sims & Heazlewood 2003, p. 20).

In 2003, Standards Australia published ‘AS8000-2003 Good Governance Principles’. The objective of this standard is to provide a ‘blueprint for the development and implementation’ of good governance procedures for a variety of entities (Australian Standard 2003, p. 2). The United Nations Research Institute for Social Development, argues that codes of conduct are used to ‘deflect criticism’ away from corporations and reduce ‘demand for external regulation’ (Utting 2004, p. 1).

2.2.5 Conclusion to Parent Discipline One: Corporate Governance

This section introduced corporate governance, the first of four parent disciplines. It provided an overview and brief history of corporate governance, corporate governance theory, the importance of corporate governance and corporate governance reforms in Australia.

The literature reviewed revealed that governance of corporations commenced when legislation and regulation was required after the incorporation of limited liability companies (Vinten 1998, p. 419). Essentially, corporate governance refers to the control and ‘systems of accountability by those in control’ (Farrar 2003, p. 66). Australian corporate law reflects the shareholder perspective under common law and the Corporations Act 2001 (Cth) (Stranden 2005, p. 13).

The literature outlined the Commonwealth Government’s reforms of Australian corporate law. The focus of this study is on the ASX reforms, in particular, principle 4 of the ASX recommendations on audit committees.

2.3 Parent Discipline Two: Corporate Boards

This section reviews the literature on corporate boards, the second parent discipline. It provides an overview of the roles and functions of corporate boards, and the attributes of a corporate board. It also discusses the effect of board size, and board diversity and its delegation of authority to board committees.
2.3.1 Corporate Boards

A corporation is an entity that is legally distinct from the owners of the share capital and the management who control the assets and direction of the company on behalf of the owners (Keasey, Thompson & Wright 2005, p. 99). Shareholders appoint directors who form a board of directors to act on their behalf to direct the managers of the corporation (Adams, Grose & Leeson 2004, p. 284). The board of directors acts as an intermediary between managers and shareholders (Monks & Minow 2004, p. 195).

Corporate boards are a vital element for company leadership, ‘improving company performance and investors perceptions’ (Carver & Oliver 2002, p. 1). The board as ultimate decision maker plays a crucial role in corporate governance (Psaros & Seamer 2001, p. 45), company performance (Carver & Oliver 2002, p. 1) and management of risk (Murray 2003, p. 142). Scholars; Fama & Jensen (1983b), Mace (1971) Pearce and Zahra (1991) and Vance (1964) have all agreed that corporate boards owe a fiduciary duty to shareholders to maximise shareholder wealth (Harris & Shimizu 2004, p. 775).

The widespread awareness of the importance of good corporate governance has led to mandatory changes through the introduction of statutes and regulations and codes of conduct regarding roles, functions and attributes of corporate boards in pursuit of enhanced board effectiveness (Carver & Oliver 2002, p. 1; Harris & Shimizu 2004, p. 775).

2.3.2 Roles and Functions of a Corporate Board

In the Anglo-American model of corporate boards, the primary role of the board is to manage, direct or supervise the management of the corporation (Farrar 2001, p. 307) and provide entrepreneurial leadership through managed risks in the best interests of the company (Financial Services Authority 2003). Essentially, the board needs to determine its role and objectives, the processes that should be used to achieve those objectives, and to consider selection and nomination of new board members for formal appointment by shareholders at their annual general meeting (Brountas 2004, p. 37).

The legal framework limits the duties of boards to a ‘duty of care’ and the ‘duty of loyalty’ being judged under the ‘business judgment rule’ (Monks & Minow 2004, p. 200). Various scholars have considered the extended roles and functions of the board beyond their legal responsibilities (Monks & Minow 2004, p. 200).
The Business Roundtable Group (1997) representing the largest US corporations have described the five primary board functions as:

1. Select, regularly evaluate and, if necessary, replace the chief executive officer; determine management compensation; and review succession planning;

2. Review and, where appropriate, approve the major strategies and financial and other objectives and plans of the corporation;

3. Advise management on significant issues facing the corporation;

4. Oversee processes for evaluating the adequacy of internal controls, risk management, financial reporting and compliance, and satisfy itself as to the adequacy of such processes; and

5. Nominate directors and ensure that the structure and practices of the board provide for sound corporate governance.

(The Business Rountable 1997, pp. 4-5).

The OECD (1999, 2004) in a similar vein set recommended guidelines on corporate strategy, monitoring the effectiveness of governance practices, compensation, transparency on board actions, ensuring integrity in financial reporting and the application of independent judgment (OECD 1999, 2004). Bosch (1995a, pp. 8-9) in addition to other scholars argued that the board should also ensure that the company is solvent by meeting its financial obligations if and when they are due. He also outlined the requirement for boards to consider their ethical obligations in addition to their legal requirements (Bosch 1995a, pp. 8-9).

2.3.3 Attributes of a Corporate Board for Effectiveness

Advocates for improving corporate performance through enhanced board effectiveness have sought reforms in the areas of ‘reduced board size, more independent directors, separation of the roles of chairman and chief executive officer’ and in the decision-making responsibilities of the board (Harris & Shimizu 2004, p. 775).
2.3.4 Board Size

It is generally accepted that the size of the board will very much depend on the size and complexity of the corporation, the number of independent directors required, and the skills needed by the board (Brountas 2004, p. 75; Renton 1994, p. 36; Shailer 2004, p. 40). Most researchers have established that in larger corporations the board will generally have more directors due to the larger administrative burden (Cochran & Wartick 1998, p. 17) and as a response to political exposure (Watts & Zimmerman 1979).

Higgs (2003) and the ASX in its 2003 ‘Essential Corporate Governance Principles’ and 2007 ‘Corporate Governance Principles and Recommendations’ do not specify what would be considered as an appropriate board size, but rather, recommend that the board should be of adequate size (ASX Corporate Governance Council 2003, 2007). Research of the top one hundred Australian public companies, reveals that boards have between four and fifteen directors (Shailer 2004, p. 40). A 2010 study by Korn/Ferry International (2010, p. 17) found that 89% of the top 300 Australian companies had between four and nine directors. Research conducted by Renton (1994, p. 37) and Shailer (2004, p. 40) found that the average number of directors in Australian public companies is nine. In 2008, the average number of directors in Australian public companies was seven (Korn/Ferry International & Egan Associates 2008, p. 17).

The number of directors will have both a positive and negative effect on board functioning and corporate performance (Van den Berghe & Levrau 2004, p. 462). The advantages of having a greater number of directors are: an increased pool of expertise, a greater variety of perspectives (Renton 1994, p. 37; Van den Berghe & Levrau 2004, p. 462) and less domination by the chief executive officer (Van den Berghe & Levrau 2004, p. 462). The negative effects of larger boards are: the decreased levels of motivation and performance, co-ordination problems, and an increased tendency to factions and coalitions which all may negatively influence corporate performance (Van den Berghe & Levrau 2004, p. 462).

2.3.5 Board Diversity

Board diversity relates to the composition of the board in regard to the directors’ gender, age, ethnicity, director independence, industry background and experience (Moodie 2001, p. 1 & 17; Van der Walt et al. 2006, p. 136). Board composition will vary depending on the structure of the corporation and its performance and social requirements (Van der Walt et al. 2006, p. 129). There is an assumption that greater diversity of directors on corporate
boards will lead to ‘less insular decision making processes and greater recognition of change’ (Van der Walt et al. 2006, p. 129). Board diversity will determine how the board functions (Keasey, Thompson & Wright 2005, p. 101) and companies should therefore structure their boards to provide diverse perspectives in a competing market (Van der Walt et al. 2006, p. 129).

Australian boards are generally dominated by men aged in their fifties with accounting, legal or banking backgrounds and are less likely to appoint directors under the age of forty (Moodie 2001, p. 1 & 18). Similarly, boards in US corporations comprise mostly middle aged-men and an increasing number of new directors coming from academic and non-profit company backgrounds (Monks & Minow 2004, p. 198). Women on boards of Australian public companies are under-represented with only 8.3% of the directors of the top 200 publicly listed companies being women (Corporations and Markets Advisory Committee 2009). In European Union companies, the figure is 13.7% (Ernst & Young 2014).


In contrast, empirical studies have found independent directors do not strengthen boards by improving financial performance (Fosberg 1989; Grace, Ireland & Dunstan 1995; Hermalin & Weisbach 1991; Molz 1988; Vafeas 2000). Hilmer (1998, p. 81) argues that independence on corporate boards is only relevant when you have dishonest and untrustworthy managers. Hilmer (1998, p. 81) further argues that improved performance rather than independence is needed to produce better returns for shareholders. Improved performance is promoted through ‘competence, insight, experience, judgment, knowledge, imagination, and political skill’ (Hilmer 1998, p. 81).

It is widely believed that independent boards are likely to create balance, and better board performance (Moodie 2001, p. 19), and that they more are likely to act in the best interests of the stakeholders (Petra 2005). Supporters of independent boards include Greenbury (1995), Higgs (2003), the Financial Services Authority (2003), the OECD (1999, 2004) and the ASX (2003, 2007, 2010, 2014).
2.3.6 Delegation of Authority and Committees

A decision is a deliberate choice between alternative courses of action made in pursuit of a desired outcome (Elliott & Elliott 2005, p. 44). A decision is also a judgment applied to a particular knowing (Cutting & Kouzmin 2002, p. 28). Boards are decision-makers on behalf of the corporation, and the question of what decisions should be delegated is a valid question when applied to committees (Strikwerda 2003, p. 38). Various sub-committees such as audit, remuneration and nomination committees exist in public companies and are an avenue to delegate responsibility (Shailer 2004, p. 40).

Most publicly listed Australian companies have an audit committee as part of their obligations under ASX listing rules (Korn/Ferry International & Egan Associates 2002, p. 16; Shailer 2004, p. 41). Audit committees generally oversee the audit function and comprise solely independent directors (Shailer 2004, p. 41). An analysis of the literature on audit committees is in Section 2.6. Supporters of delegated authority advocate the benefits to be: quicker anticipation of local trends, more ethical determinations and an opportunity to refine their directorship skills (Strikwerda 2003, p. 39). Keasey, Thompson and Wright (2005) argue that if subcommittees are given broad terms of reference, this will inhibit the monitoring process and tie up directors and management resources in a manner that is detrimental to the shareholders' interests at large (Keasey, Thompson & Wright 2005, p. 71).

2.3.7 Conclusion to Parent Discipline Two: Corporate Boards

This section has discussed corporate boards, the second parent discipline. It provided an overview of the roles and functions of corporate boards, and of the attributes of a corporate board. It discussed the effect of board size and board diversity, and the delegation of authority to board committees. The literature revealed that in the Anglo-American model of corporate boards, the primary role of the board is to manage, direct or supervise the management of the corporation (Farrar 2001, p. 307) and provide entrepreneurial leadership through managed risks in the best interests of the company (Financial Services Authority 2003). The board as ultimate decision-maker plays a crucial role in corporate governance (Psaros & Seamer 2001, p. 45), company performance (Carver & Oliver 2002, p. 1) and the management of risk (Murray 2003, p. 142).
The diversity and composition of the board refers to the directors’ gender, age, ethnicity, directors independence, industry background and experience (Moodie 2001, p. 1 & 17; Van der Walt et al. 2006, p. 136). The results of studies conducted on whether the independence of directors strengthens boards have been mixed and inconclusive.

Various sub-committees such as audit, remuneration and nomination committees exist in public companies for the board to delegate specialised decision-making (Shailer 2004, p. 40). Ultimately, the full board remains responsible for the direction and performance of the company (Corporations and Markets Advisory Committee 2009, p. 5). Most publicly listed Australian companies have an audit committee as part of their obligations under ASX listing rules (Korn/Ferry International & Egan Associates 2002, p. 16; Shailer 2004, p. 41). Supporters of delegated authority argue that the benefits include; quicker anticipation of local trends, more ethical decision-making and an opportunity to refine their directorship skills (Strikwerda 2003, p. 39).

2.4 Parent Discipline Three: Company Directors

The literature in the third parent discipline of company directors is outlined in this section. It provides an overview of company directors, their respective duties, the roles and responsibilities of executive directors, and non-executive directors, and the independence of non-executive directors.

2.4.1 Company Directors

Directors are the individuals that sit on the boards that are entrusted to manage the corporation (Proctor & Miles 2002, p. 25). Executive directors are full-time employees of the company (Weir & Laing 2001, p. 87). They are responsible for the day-to-day management of the company with defined roles and responsibilities (Weir & Laing 2001, p. 87). Non-executive directors, also referred to in the literature as ‘part-time’, ‘independent’ or ‘outside directors’, act to ensure that the corporation is run in the best interests of the shareholders (Barratt & Korac-Kakabadse 2002, p. 33; Houston & Lewis 1992, p. 4).

The Corporations Act 2001 (Cth) does not distinguish between executive and non-executive directors (Coulton & Taylor 2004, p. 21). A director is defined under Section 9 of the Corporations Act 2001 (Cth) as:
Director of a company or other body means:

(a) a person who:

(i) is appointed to the position of director; or

(ii) is appointed to the position of an alternate director and is acting in that capacity; regardless of the name that is given to their position; and

(b) unless the contrary intention appears, a person who is not validly appointed as a director if:

(i) they act in the position of a director; or

(ii) the directors of the company or body are accustomed to act in accordance with the person’s instructions or wishes.

(Baxt & Harris 2006, p. 9).

The Corporations Act 2001 (Cth) under Section 201B (Baxt & Harris 2006, p. 529) restricts director appointment to natural persons over the age of eighteen years and a person who is disqualified to act as a director by ASIC (Baxt 2002, p. 23; Proctor & Miles 2002, p. 129). There are no formal qualifications or training required to be a company director (Pease & McMillan 1993, p. 113). Justice Rogers of the New South Wales Supreme Court made the following comment with respect to directors; ‘Two activities which do not require any training, or licence to practice, are parenthood and directorships of companies’ (Tomasic & Bottomley 1993, p. 11).

2.4.2 Directors’ Duties

Directors’ duties fall under two types: fiduciary duties of ‘loyalty and good faith’ and non-fiduciary duties of ‘care, diligence, and skill’ (Sims & Heazlewood 2003, p. 8). A fiduciary duty is defined as ‘an equitable duty to act in good faith for the benefit of another’ and a fiduciary relationship is defined as 'a relationship of trust and confidence or of confidential relations' (Nygh & Butt 1997, p. 471).

A director has a fiduciary duty, to the company and its members because the directors are appointed to act in the best interests of the shareholders (Baxt 2002, p. 45; Sims & Heazlewood 2003, p. 8). The fiduciary obligations are enshrined both in common law and in equity principles and have been codified by legislation under the Corporations Act 2001 (Cth) (Farrar 2008). Figure 2.2 diagrammatically depicts the directors’ duties under the common law and in equity.
The *Corporation Act* 2001 (Cth) under Section 181 codifies the directors’ fiduciary obligation ‘to act in good faith and in the best interests of the company’ (Baxt & Harris 2006, p. 509; Redmond 2005, p. 406; Sims & Heazlewood 2003, p. 9); Sections 182 and 183 prohibit directors from misusing information to gain an advantage for themselves or others (Baxt & Harris 2006, pp. 512-513; Sims & Heazlewood 2003, p. 9) and Sections 191 to 196 and Part 2E.2: state that directors have a duty to avoid actual and potential conflicts of interest, and require directors to disclose conflicting interests and related party transactions (Baxt & Harris 2006, pp. 516, 517 & 609; Sims & Heazlewood 2003, p. 9).

Figure 2.3 below diagrammatically depicts the directors’ duties under current Australian law.
The non-fiduciary obligations of ‘care, diligence, and skill’ are codified in Section 180(1) of the Corporations Act 2001 (Cth) (Baxt & Harris 2006, p. 505; Lucy & Utter 2004, p. 46). The ‘business judgment rule’ in Section 181(2) of the Corporations Act 2001 (Cth) excuses a director of a civil offence if they make their decision in good faith and for a proper purpose in the best interests of the company (Baxt & Harris 2006, p. 505; Sims & Heazlewood 2003, p. 9).

Advocates of the ‘business judgment rule’ have labelled it as a ‘safe harbour’ for directors that have exercised due diligence in their decision-making (Tomasic & Bottomley 1993, p. 79). The rule is an aspect of judicial doctrine where the courts will not substitute their own opinion of business decisions for that of the directors because judges are not directors (Redmond 2005, p. 429). Critics of the ‘business judgment rule’ argue that the rule waters down and lowers the general duty of care and standard of care and fails to deliver certainty in relation to directors’ liability (Keller 2000, p. 126).
Directors also have a duty to prevent insolvent trading under Section 588G of the Corporations Act 2001 (Cth) (Baxt & Harris 2006, p. 1794). This duty requires directors to prevent the company from incurring a debt if the company is insolvent or if they suspect that the company will become insolvent as a consequence of incurring that debt (Farrar 2001, p. 147; Sims & Heazlewood 2003, p. 10).

2.4.3 Executive Directors’ Roles and Responsibilities

Corporate boards consist of both executive and non-executive directors (Weir & Laing 2001, p. 87). Although the Corporations Act 2001 (Cth) does not distinguish between executive and non-executive directors, they have fundamentally different roles and responsibilities (Coulton & Taylor 2004, p. 21).

Executive directors are generally entrusted with the day-to-day management of the company (Proctor & Miles 2002, p. 25; Weir & Laing 2001, p. 87). They are generally full-time employees of the company (Pass 2004, p. 52; Tomasic & Bottomley 1993, p. 18) who have a dual responsibility to their contract of employment and their fiduciary duties (Tomasic & Bottomley 1993, p. 19).

The responsibilities of executive directors include: the implementation of the board’s strategies through leadership (Pass 2004, p. 53; Treadwell 2006, p. 66) and supervision of the management and reporting to shareholders (Pass 2004, p. 53). Executive directors also have a responsibility to protect the company’s assets, prevent and detect fraud and ensure the company’s accounting records are accurate (Hemraj 2003, p. 150).

2.4.4 Non-Executive Directors’ Roles and Responsibilities

It is argued that executive directors are unable to evaluate their own performances (O’Sullivan 2000, p. 283). Non-executive directors are appointed as regulators, monitoring the interests of the shareholders (Barrow 2001, p. 34; Coulton & Taylor 2004, p. 18; Weir & Laing 2001, p. 87) and they act as a voice for others (Hall & Le Mire 2006, p. 4). The removal of non-executive directors from a board would result in the board becoming ‘just another management forum’ (Chambers 2005a, p. 24).

Roberts (2004, p. 1) suggests that the role of non-executive directors is ‘largely invisible’ and little is known as to what they actually do. Turnbull (2000, p. 395) argues that the role of non-executive directors is difficult because they have to resist agreeing with the
executive directors who are on the board nomination committee that recommends their appointment to the shareholders, unless the nomination committee comprises only of non-executive directors.

Traditional non-executive directors were appointed to boards to provide ‘common sense, wisdom and strategic acumen to board debate’ (Treadwell 2006, p. 64). The role has expanded and is now seen as an ‘important guarantee of integrity and accountability of companies’ (Pass 2004, p. 53) and contributes to the progress of the corporation (Kakabadse et al. 2001, p. 4).

Non-executive directors are expected to be independent from the company (Pass 2006, p. 469; Peaker 2003, p. 43; Tomasic & Bottomley 1993, p. 14), provide an independent view through vision and experience (Bosch 1995b, p. 225; Tomasic & Bottomley 1993, p. 14), contribute to committees of the board (Peaker 2003, p. 43), and hold executive directors responsible for past performance and current strategy by ‘challenging, questioning, testing and probing the executive directors’ (Roberts 2004, p. 2). It is also expected that non-executive directors will continue to be non-executive but will engage in the business, challenging decisions but remaining supportive and independent at all times (Roberts 2004, p. 1; Roberts, McNulty & Stiles 2005, pp. 13-15).

Geletkanycz and Hambrick (1997, p. 662) describe non-executive directors’ as ‘boundary spanners’ that they fill the void between a corporation and its stakeholders with ‘information, wants and needs’. Barratt and Korac-Kakabadse (2002, p. 32) argue that non-executive directors that are ‘reflexive’ rather than ‘reactive’ are likely to ‘enhance organisational, societal and environmental wellbeing’ and stimulate change in the organisation to prevent the possibility of crisis.

Figure 2.4 diagrammatically depicts the non-executive director boundary influences.
2.4.5 Independent Non-Executive Directors

Many definitions of the term ‘independence’ exist in the literature. There is however, ‘a lack of consistency in interpreting the definition of independence’ (Brennan & McDermott 2004, p. 325). Independence is generally regarded as having ‘no connection to the company other than on the seat of the board’ (Monks & Minow 2004, p. 227).

The ASX as part of its ‘Principles of Good Corporate Governance and Best Practice Recommendations’ defined ‘Independent Director’ at Box 2.1 as:

> An independent director is a non-executive director (is not a member of Management) and:

1. is not a substantial shareholder of the company or an officer of, or otherwise associated directly with, a substantial shareholder of the company;

2. within the last three years has not been employed in an executive capacity by the company or another group member, or been a director after ceasing to hold any such employment;
3. within the last three years has not been a principal of a material professional advisor or a material consultant to the company or another group member, or an employee materially associated with the service provided;

4. is not a material supplier or customer of the company or other group member, or an officer of or otherwise associated directly or indirectly with a material supplier or customer;

5. has no material contractual relationship with the company or another group member other than as a director of the company;

6. has not served on the board for a period which could, or could reasonably be perceived to, materially interferes with the director’s ability to act in the best interests of the company;

7. is free from any interest and any business or other relationship which could, or could reasonably be perceived to, materially interferes with the director’s ability to act in the best interests of the company.

(ASX Corporate Governance Council 2003, p. 20; Ritchie 2007).


Keasey and Hudson (2002, p. 363) argue that the ability of independent non-executive directors to influence performance depends on: whether the directors ‘have the combined skills and knowledge to make an impact’, whether the board allows the non-executive director to have an influence and whether they have the incentives to do so. Smallman (2007, p. 240) suggests that independent directors are more likely to be over reliant on management due to their lack of knowledge of the company’s business and the time constraints that will cause them to struggle with making competent decisions.

Between fifty and fifty-five per cent of the directors of Enron Corp. were independent, and between forty and fifty per cent of the directors of WorldCom were independent (Petra 2006, p. 108). It was argued that these US corporations failed because the entire board failed to perform their corporate governance responsibilities (Petra 2006, p. 108).

### 2.4.6 Conclusion to Parent Discipline Three: Company Directors

The literature in the parent discipline of company directors was outlined in this section. It provided an overview of company directors. It discussed the roles and responsibilities of executive directors, and non-executive directors and the independence of non-executive directors. Directors are the individuals that sit on boards that are entrusted to manage the corporation (Proctor & Miles 2002, p. 25). Corporate boards consist of both executive and non-executive directors (Weir & Laing 2001, p. 87). Although the Corporations Act 2001 (Cth) does not distinguish between executive and non-executive directors, they fundamentally have different roles and responsibilities (Coulton & Taylor 2004, p. 21). Directors’ duties fall under two types: fiduciary duties of ‘loyalty and good faith’ and non-fiduciary duties of ‘care, diligence, and skill’ (Sims & Heazlewood 2003, p. 8). The relationship between a director, the company and its members is a fiduciary duty because the directors are appointed to ‘act in the best interests of the shareholders’ (Baxt 2002, p. 45; Sims & Heazlewood 2003, p. 8).

Non-Executive directors are expected to be independent from the company (Pass 2006, p. 469; Peaker 2003, p. 43; Tomasic & Bottomley 1993, p. 14), provide an independent view through vision and experience (Bosch 1995b, p. 225; Tomasic & Bottomley 1993, p. 14), contribute to committees of the board (Peaker 2003, p. 43), hold executive directors responsible for past performance and strategy by ‘challenging, questioning, testing and probing the executive directors’ (Roberts 2004, p. 2). Directors’ independence is generally regarded as ‘no connection to the company other than on the seat of the board’ (Monks & Minow 2004, p. 227).
2.5 Parent Discipline Four: Corporate Performance

This section reviews the literature in the final parent discipline of corporate performance.

2.5.1 Corporate Boards and Corporate Performance

The measurement of board performance is widely acknowledged as a difficult undertaking because it is not ‘tangible, visible, and measurable’ and is often judged by market performance (Cairnes 2003, p. 9; Korn/Ferry International & Egan Associates 2002, p. 13; Moodie 2001, p. 23). Dulewicz, MacMillan and Herbert (2004, pp. 14-15) argue that directors require the personal competencies of strategic perception and decision-making, analytical understanding, good communication skills, the ability to interact, board management skills and the motivation to achieve results. Zandstra (2002, p. 16) argues that boards of directors should also ‘function in a morally and ethical manner’. Fram and Zoffer’s (2005) study revealed that, since the corporate collapse of Enron, US company directors have not made significant changes and have lost confidence in the management of their companies (Fram & Zoffer 2005, p. 35).


Coulson-Thomas (1994, p. 29; 2005, p. 68) argues that it is not corporate governance but board harmony and directors’ approaches and behaviour that drive success in the boardroom. Successful boards ‘manage change well, have the drive to succeed, assume responsibility for their actions, concentrate on strategic and business development, have a clear vision, inspire, energise, motivate and avoid rhetoric and hype’ (Coulson-Thomas 2005, pp. 67-69). Boards of unsuccessful firms, on the other hand, tend to ‘lack drive and
heart, generalise, are easily distracted, avoid taking responsibility’ (Coulson-Thomas 2005, p. 69), and ‘fail to give a sense of purpose and lack a clear vision and mission’ (Coulson-Thomas 1994, p. 30).

Bavly (1999, p. 95) argues that there is no correlation between ‘company performance and the adherence to board governance guidelines’. Dalton et al., (2005, pp. 91-93; 1998, p. 269) conducted a meta-analysis of 159 studies over a 40-year period and found little consistency in the results as there was no correlation with improved performance and independence of directors and separation of the roles of chairman and chief executive office and they concluded that there was no empirical evidence to justify mandatory independence on company boards. Leblanc (2004, p. 437), in agreement with Dalton et al., say that the findings are ‘mixed at best’.

2.5.2 Independence of Directors and Corporate Performance

The results of research over the last thirty years revealed inconclusive results on the correlation between the independence of non-executive directors and corporate performance (Chambers 2005a, p. 31; Clifford & Evans 1997, p. 225; Leblanc 2004, p. 440; McCabe & Nowak 2008). Reforms that require corporations to include a higher proportion of independent directors have been introduced in an attempt to strengthen boards and better serve the shareholders’ interests (Baysinger & Butler 1985, p. 114; Finegold, Benson & Hecht 2007, p. 866). Grantham (2004, p. 223) argues that true independence of directors is impractical as independent non-executive directors are generally part-time and would not be sufficiently able to perform their oversight duties. McConvill and Bagaric (2004, p. 40) argue against independence and say that independence of directors is fundamentally a ‘bad move’. They propose that all directors should have a significant interest in the company to link their own self-interests with those of the shareholders (Hoi & Robin 2004; McConvill & Bagaric 2004). Hoi and Robin (2004, p. 48) support this proposition and add that financial incentives will lead to desirable behaviour and effective monitoring of managerial decision-making.

Studies on the correlation between the independence of non-executive directors and performance have also yielded inconclusive results. Finegold, Benson and Hecht (2007, p. 866) conducted a review of 105 studies performed between 1989 and 2005 subsequent to the introduction of the Sarbanes Oxley Act and found ‘little evidence ... to indicate a positive effect on corporate performance, as measured by financial performance’ (Finegold, Benson & Hecht 2007, p. 866). Bhagat and Black (1999, p. 921; 2002, p. 231)
found no evidence that greater board independence correlated with increased performance or faster growth. Ehikioya (2009) in a Nigerian study found that ‘ownership concentration had a positive impact on performance’. Millstein and MacAvoy (1998, p. 1283) found that active ‘independent boards performed better than those with passive non-independent boards’. Empirical Australian studies on the correlation between the independence of non-executive directors and firm performance have revealed negative or insignificant results (Wang & Oliver 2009, p. 198). An empirical Australian study conducted by Farrer and Ramsay (1998, p. 233 & 246) on ‘whether there is a positive relationship between the level of director share ownership and the performance of Australian companies’ produced inconclusive results. The results did however in some circumstances reveal a positive link between director share ownership and returns to shareholders (Farrer & Ramsay 1998, p. 246).

Muth and Donaldson (1998, pp. 5-6) studied the relationship of board independence between the competing agency, stewardship and dependence theories. Their study utilised a statistical regression analysis methodology based on firm and aggregated board member data for publicly listed companies (Muth & Donaldson 1998, p. 11). The researchers collected data through company reports for the years 1992, 1993 and 1994 and ASX announcements spread across 23 industry classifications with government and non-profit organisations being excluded (Muth & Donaldson 1998, p. 11). A total of 154 companies was used in the study representing 12% of the total population of 1173 companies (Muth & Donaldson 1998).

The independent variables used for board structure were: ‘leadership structure, proportion of non-executive directors, board size, average age of directors, average tenure of directors, level of interest alignment with owners and the average number of external links to other organisations and co-directors’ (Muth & Donaldson 1998, p. 12). The following firm performance multiple dependent variables were used: ‘profit margin, return on equity (ROE), return on assets (ROA), and increases in sales’ (Muth & Donaldson 1998, p. 13). The study concluded that independence did not have a significant positive effect on performance: in fact, board independence negatively affected shareholder wealth and sales growth (Muth & Donaldson 1998, p. 26).

Lawrence and Stapledon (1999, p. 15) conducted a 1995 empirical study of the top 100 companies, ranked by market capitalisation listed on the ASX. The purpose of the study was to establish whether a direct relationship existed between board composition and
corporate performance, and whether independent directors had a positive influence in the area of executive remuneration (Lawrence & Stapledon 1999, p. 15). The study used an ordinary least square statistical analysis methodology based on share price performance and accounting performance for the period 1985 to 1995 (Lawrence & Stapledon 1999, p. 16). Their study ‘produced no evidence of a negative relationship between the proportion of independent directors and company growth’ and further found that ‘independent directors appear to be totally unrelated to corporate growth’ (Lawrence & Stapledon 1999, p. 23). They did, however, conclude ‘that the proportion of independent directors was positively related to a company’s assets, net profit and earnings before interest and income tax (EBIT)’ and that there was ‘no evidence to suggest that companies with a higher proportion of executive directors are better able to manage their resources’ (Lawrence & Stapledon 1999, p. 23).


In a similar study to Muth and Donaldson (1998), Nicholson & Kiel (2007) used a case study qualitative methodology employing a pattern matching analysis of seven cases (Nicholson & Kiel 2007, p. 585). They concluded that ‘no one theory could account for the general pattern of results across all or in a majority of cases’ (Nicholson & Kiel 2007, p. 599). Wang and Oliver (2009, p. 196), in another Australian study to determine the relationship between board composition and firm performance, found that independent directors had no significant effect on the level of firm performance (Wang & Oliver 2009, p. 196). Table 2.4 presents a summary of results of empirical studies on the contribution of independent non-executive directors and corporate performance.
### Table 2.4 – Empirical Evidence: Contribution of Independent / Non-Executive Directors on Firm Performance.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Country</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfeffer 1972</td>
<td>USA</td>
<td>Contingent</td>
</tr>
<tr>
<td>Baysinger and Butler 1985</td>
<td>USA</td>
<td>Positive</td>
</tr>
<tr>
<td>Fosberg 1989</td>
<td>USA</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Schellenger et al. 1989</td>
<td>USA</td>
<td>Positive</td>
</tr>
<tr>
<td>Hermalin and Weisbach 1991</td>
<td>USA</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Pearce and Zahra 1992</td>
<td>USA</td>
<td>Positive</td>
</tr>
<tr>
<td>Daily and Dalton 1992</td>
<td>USA</td>
<td>Positive</td>
</tr>
<tr>
<td>Yermack 1996</td>
<td>USA</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Agrawal and Knoeber 1996</td>
<td>USA</td>
<td>Negative</td>
</tr>
<tr>
<td>Muth and Donaldson 1998</td>
<td>Australia</td>
<td>Negative</td>
</tr>
<tr>
<td>Vafeas and Theodorou 1998</td>
<td>UK</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Dalton et al. 1998</td>
<td>USA</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Lawrence and Stapledon 1999</td>
<td>Australia</td>
<td>Negative</td>
</tr>
<tr>
<td>Bhagat and Black 2000</td>
<td>USA</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Coles et al. 2001</td>
<td>USA</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Dehaene et al. 2001</td>
<td>Belgium</td>
<td>Positive</td>
</tr>
<tr>
<td>Hossain et al. 2001</td>
<td>New Zealand</td>
<td>Positive</td>
</tr>
<tr>
<td>Panasian et al. 2003</td>
<td>Canada</td>
<td>Contingent</td>
</tr>
<tr>
<td>Kiel and Nicholson 2003</td>
<td>Australia</td>
<td>Negative</td>
</tr>
<tr>
<td>Cotter and Silverster 2003</td>
<td>Australia</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Singh and Davidson 2003</td>
<td>USA</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Balatbat et al. 2004</td>
<td>Australia</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Peng 2004</td>
<td>China</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Chang and Leng 2004</td>
<td>Malaysia</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Chin et al. 2004</td>
<td>New Zealand</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Randoy and Jenssen 2004</td>
<td>Sweden</td>
<td>Contingent</td>
</tr>
<tr>
<td>Anderson and Reeb 2004</td>
<td>USA</td>
<td>Contingent</td>
</tr>
<tr>
<td>Chen et al. 2005</td>
<td>Hong Kong</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Krivogorsky 2006</td>
<td>Continental Europe</td>
<td>Positive</td>
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<tr>
<td>Choi et al. 2007</td>
<td>South Korea</td>
<td>Positive</td>
</tr>
<tr>
<td>Luan and Tang 2007</td>
<td>Taiwan</td>
<td>Positive</td>
</tr>
<tr>
<td>Chan and Li 2008</td>
<td>USA</td>
<td>Contingent</td>
</tr>
</tbody>
</table>

Source: Wang and Oliver 2009, p.198
2.5.3 Conclusion to Parent Discipline Four: Corporate Performance

This section reviewed the literature in the final parent discipline of corporate performance. The literature revealed that the results of studies investigating the correlation between company performance and structural elements of the board are mixed (Dalton & Dalton 2005, pp. 91-93; Dalton et al. 1998, p. 269; Leblanc 2004, p. 437) as are the results of studies conducted on the independence of directors and corporate performance (Chambers 2005a, p. 31; Clifford & Evans 1997, p. 225; Leblanc 2004, p. 440; McCabe & Nowak 2008).

2.6 Immediate Discipline: Audit Committees

This section reviews the literature in the immediate discipline of audit committees. It outlines audit committee codes and guidelines, audit committee roles and responsibilities, the independence of audit committees, the effectiveness of audit committees, audit committee best practice and audit committees and corporate performance.

2.6.1 Audit Committees

An ‘audit committee is a sub-committee of the board’ with delegated authority from a corporation’s board of directors (Spira 1999b, p. 231; Turpin & DeZoort 1998, p. 35). Representatives and participants of the audit committee are independent non-executive directors (Spira 1999b, p. 231) entrusted with liaising between management, and internal and external auditors (Chen, Moroney & Houghton 2005, p. 218) and overseeing the overall financial reporting and auditing function (DeZoort 1997, p. 208). Audit committees’ gained popularity after high profile corporate collapses which highlighted a loss in confidence in the ‘reliability and integrity of financial reports’ (Chen, Moroney & Houghton 2005, p. 217; Lin, Li & Yang 2006, p. 921; Vanasco 1994, p. 25).

Various codes, reports and pieces of legislation have been introduced which require the existence of an audit committee in an attempt to increase the quality and validity of financial reporting (Pergola 2005, p. 177). An audit committees is now considered to be a ‘corporate governance mechanism’ (Carson 2002, p. 4; DeZoort 1997, p. 208; Spira & Bender 2004, p. 489). Similarly, Psaros (2009, p. 114) suggests an audit committee is a ‘crucial component of effective corporate governance’. 
2.6.2 Codes and Guidelines for Audit Committees

Recommendations for mandatory audit committees in public companies are not new and date back to 1940 (Walker 2004, p. 159). An outgrowth of codes, guidelines and recommendations in support of mandatory audit committees emerged as a result of earning restatements and frauds that have led to high profile corporate collapses (Rezaee, Olibe & Minmier 2003, p. 530). The purpose of these codes and guidelines was to restore public confidence in financial reporting without the need for government intervention (Spira 2003, p. 181).


In 1999, the Turnbull report, the OECD, and the Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees recommended the use and enhancement of audit committees (Krishnamoorthy, Wright & Cohen 2002b, p. 52; Myers & Ziegenfuss 2006, p. 49; Walker 2004, p. 5; Zaman 2001, p. 164). The committee made ten recommendations (Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees 1999, pp. 10-16; Karamanou & Vafeas 2005, p. 5; Leaub & Zook 1999, pp. 38-40; Millstein 1999, p. 1063). The recommendations have been grouped in the following three categories:

(i) strengthening the independence of the audit committee;
(ii) making the operation of the audit committee more effective; and
(iii) improving the mechanisms for discussion and accountability among the audit committee, the outside auditors, and the management (Millstein 1999, p. 1063).

In 2001, Professor Ian Ramsay produced a report titled ‘Independence of Australian Company Auditors – Review of the Australian Requirements and Proposals for Reform’ (Parker & Porter 2004, p. 345; Ramsay 2001). The report’s primary recommendation was
the mandatory rule that all companies listed on the ASX have an audit committee (Chen, Moroney & Houghton 2005, p. 218). The introduction of the Corporate Law Economic Reform Program Act 2004 restricted the implementation of Professor Ramsay’s recommendation to the top 500 companies listed on the ASX (Chen, Moroney & Houghton 2005, p. 218).

In July 2003, the Financial Reporting Council’s UK report titled ‘Audit Committees Combined Code Guidance’ chaired by Sir Robert Smith was released (Smith 2003). The purpose of the report was to provide guidance to company boards in arranging their audit committees and assist directors that served on these audit committees (Smith 2003).

2.6.3 Audit Committee Roles and Responsibilities

The main purpose of audit committees is to assist the company directors to function efficiently (Hemraj 2003, p. 153) with members that possess ‘common sense, wide experience, independence, and good judgment’ (Hunt & Carey 2001, p. 38). The American Institute of Auditors defined the internal audit function as:

An independent, objective assurance and consulting activity designed to add value and improve an organisation’s operations. It helps an organisation accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance (Nagy & Cenker 2002, p. 130).

The audit committee’s primary role is oversight, which is intended to protect the interests of all stakeholders (Petra 2005, p. 58). The responsibilities of the audit committee members are:

i. **Financial Reporting Oversight** – Advising the board of directors of the reliability of the company’s financial statements and other information with full and frank disclosure (Chambers 2005b, p. 96; Harrington 2003, p. 20; Livingston 2005, p. 24);

ii. **Independent Audit** – To promote and oversee an effective independent audit of the company’s financial statements (Chambers 2005b, p. 96; Livingston 2005, p. 25);

iii. **Risk Management** – Advising the board of directors on effectiveness of risk management (Chambers 2005b, p. 96; Livingston 2005, p. 25);
iv. **Internal Control** – Assessing and advising the board of directors of the overall adequacy and effectiveness of the internal audit function (Chambers 2005b, p. 96; Livingston 2005, p. 25).

In theory, it is suggested that the shareholders appoint the external auditors (Bosch 1995b, p. 165). However, in addition to the above responsibilities, the audit committee recommends the appointment of the external auditor to the shareholders for approval at the annual general meeting and evaluates the corporation’s external auditors (who have the ultimate responsibility for the audit process and the accuracy of the financial statements), negotiates the terms and conditions for the external audit and if deemed appropriate, recommends to the shareholders the appointment of a new external auditor at the next annual general meeting (Bavly 1999; Brountas 2004; Cochran & Wartick 1998; Petra 2005; The Business Roundtable 1997).

### 2.6.4 Audit Committee Independence

Concerns over fraudulent, biased and poor standards of financial reporting have led to the emergence of independent audit committees (Spira 1999a, p. 262). It has been assumed that a lack of independence will lead to subjective financial reporting, causing a lack of confidence in the public market (Spira 1999a, p. 262). There has been a lack of consistency in interpreting the definition of independence (Brennan & McDermott 2004, p. 325). The New York Stock Exchange defined audit committee independence as:

> Independent of management and free from any relationship that, in the opinion of its board of directors, would interfere with the exercise of independent judgment as a committee member (Clifford & Evans 1997, p. 226).

Empirical studies on the correlation between independent audit committees and the reliability of financial statements have yielded inconsistent results (Petra 2005, p. 58). Rainsbury’s New Zealand study (2004, p. 45) found that independent non-executive directors with financial expertise are more likely to be members of audit committees. In an Australian study, Cotter and Silvester (2003, p. 211) found a greater proportion of independent directors on monitoring committees compared to the proportion of independent directors on the board itself.
Studies conducted by Dechow, Sloan and Sweeney (1996) and McMullen (1996) revealed a positive correlation between reliable financial information and independent audit committees (Petra 2005, p. 58). Abbott, Park and Parker (2000, p. 55) revealed that independent audit committees that ‘meet at least twice a year are less likely to be sanctioned for fraudulent or misleading reporting’. Carcello and Neal (2003, p. 289) revealed a positive correlation between ‘audit committee independence and financial reporting quality’. Goodwin (2003, p. 264) revealed that independence and accounting experience have complementary impacts on internal audit committees. Song and Windram (2004, p. 195) reveal that ‘independent boards promote audit committee effectiveness in financial reporting’.


The rationale behind independence is associated with the ideology that independence is a prerequisite for ethical behaviour (Spira 1999a, p. 262). The premise is that ethical behaviour will also flow down through the organisation (O’Leary & Stewart 2007, p. 788). The failed corporations Enron, WorldCom and Global Crossing all had a majority of independent directors serving on their audit committees but this did not increase the reliability of their financial reporting (Petra 2005, p. 58).

### 2.6.5 Audit Committee Effectiveness

DeZoort, Hermanson, Archambeault and Reed (2002, p. 41) identify the qualities of an effective audit committee as:

*An effective audit committee has qualified members with the authority and resources to protect stakeholder interests by ensuring reliable financial reporting, internal controls, and risk management through its diligent oversight efforts (DeZoort et al. 2002, p. 41).*

The literature pertaining to audit committee effectiveness has produced ambiguous results (Spira 1999b, p. 233). Sprangler and Braiotta (1990) argued that long term tenure would achieve greater effectiveness. Knapp (1987) suggested that members with accounting and business knowledge would contribute more effectively than members with industry knowledge.
Lee and Stone (1997) and DeZoort (1997, 1998) found that misalignment of members' qualifications and experience with the oversight responsibilities of audit committees 'could lead to external perceptions of audit committee effectiveness' (Spira 1999b, p. 234). Krishnamoorthy, Wright and Cohen (2002a, p. 3) concluded that financial literacy or expertise, independence and commitment were determinants of audit committee effectiveness. DeZoort, Hermanson, Archambeault and Reed (2002) argue that the fundamental determinants of audit committee effectiveness are ‘Composition, Authority, Resources and Diligence’ as depicted in Figure 2.5 below (DeZoort et al. 2002, p. 42).

![Figure 2.5 – Determinants of Audit Committee Effectiveness (ACE)](image)

Source: DeZoort et al. 2002, p. 42

It has been suggested that, axiomatically, ineffective audit committees may lead to fraudulent financial reporting abuses (Chambers 2005b, p. 95). In contrast, the literature reveals that evidence of audit committee effectiveness is limited and inconclusive and research has failed to reach definitive conclusions (Pomeranz 1997, p. 282; Spira 1999b, p. 255; Turley & Zaman 2004, p. 305). Guthrie and Turnbull (1995, p. 85) argue that conflicts of interest are inherent in audit committees and they do not have the power to influence the board or protect shareholders. Independence, competence, tenure and remuneration influence the effectiveness of audit committees (Magrane & Malthus 2010). Wolnizer (1995, p. 45) suggests that audit committees are ‘red herrings’ until such time as the company’s financial statements can be ‘authenticated by recourse to reliable commercial evidence’. Research undertaken by Cohen, Krishnamoorthy and Wright (2002, p. 573) through structured interviews of auditors revealed that ‘audit committees are typically ineffective and lack sufficient power to be a strong governance mechanism’.
2.6.6 Audit Committee Best Practice

Large auditing firms and professional organisations have produced literature advocating best practice with respect to audit committees. Spira (1999b, p. 233) suggests that these publications fail to disclose the ‘criteria by which they may be judged as best practice’. Pricewaterhouse Coopers (2003) produced a guide titled ‘Audit Committees: Good Practices for Meeting Market Expectations’. The publication was introduced to assist audit committee members to achieve good practice and incorporated the regulatory requirements of forty countries (Pricewaterhouse Coopers 2003, p. 1). Figure 2.6 – provides an overview of an audit committee’s main responsibilities.

**Figure 2.6 – Areas of Focus for Audit Committees**

<table>
<thead>
<tr>
<th>Financial Reporting</th>
<th>Risk Management and Internal Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Appropriateness of accounting policies</td>
<td>- Understanding of key risks</td>
</tr>
<tr>
<td>- Disclosure requirements</td>
<td>- Effectiveness of controls</td>
</tr>
<tr>
<td>- Fairness and balance of MD&amp;A / operating review</td>
<td>- Fraud Risk</td>
</tr>
<tr>
<td>- GAAP conversion</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External Audit</th>
<th>Internal Audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Appointment and remuneration and Scope of work</td>
<td>- Charter, authority and resources</td>
</tr>
<tr>
<td>- Independence requirements</td>
<td>- Scope of work</td>
</tr>
<tr>
<td>- Significant audit findings / recommendations</td>
<td>- Internal audit effectiveness</td>
</tr>
<tr>
<td>- Reviewing the performance of external auditors</td>
<td>- Responses to internal audit recommendations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maintaining and Measuring Effectiveness</th>
<th>Communication and Reporting</th>
<th>Regulatory, Compliance &amp; Ethical Matters</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Training needs</td>
<td>- Relations with management</td>
<td>- Effectiveness of system for ensuring compliance with laws and regulations</td>
</tr>
<tr>
<td>- Maintaining financial literacy</td>
<td>- Update &amp; recommendations to the full board</td>
<td>- Code of Conduct / ethics</td>
</tr>
<tr>
<td>- Annual performance evaluation of AC</td>
<td>- Reports to board and shareholders</td>
<td>- Whistle blowers</td>
</tr>
</tbody>
</table>

**Source: Pricewaterhouse Coopers 2003, p. 5**

Like Pricewaterhouse Coopers, Deloitte Touche Tohmatsu’s (2005) guide titled ‘Audit Committees: A Better Practice Guide’ claim to be a comprehensive guide to assist with
the establishment and operation of effective audit committees in Australia (Deloitte Touche Tohmatsu 2005). Figure 2.7 illustrates an effective audit committee work cycle.

Figure 2.7 – Work Cycle of an Audit Committee

Source: Deloitte Touche Tohmatsu 2005, p. 25

KPMG (2003b) produced a self-evaluation document for audit committee effectiveness titled 'An Approach to Effective Audit Committee Self-Evaluation'. It has been designed for the purpose of assessing whether an audit committee is effective based on the broad expectations of shareholders (KPMG 2003b, p. 2). In a similar vein to the publications produced by Pricewaterhouse Coopers and Deloitte Touche Tohmatsu, the Institute of Internal Auditors Australia, in conjunction with the Australian Institute of Company Directors and the Australian Accounting Research Foundation, produced 'Audit Committees: Best Practice Guide'. The publication is designed to assist members of audit committees and both internal and external auditors (Australian Accounting Research Foundation, Australian Institute of Company Directors & Institute of Internal Auditors -
Australia 2001, p. 5). The publication claims that the information it contains reflects best practice in Australia and overseas (Australian Accounting Research Foundation, Australian Institute of Company Directors & Institute of Internal Auditors - Australia 2001, p. 5).

2.6.7 Audit Committees and Corporate Performance

Audit committees as a corporate governance mechanism have produced a considerable amount of interest (Stewart & Munro 2007, p. 52). The examination of the connection between audit committees and corporate performance has not been fully exploited (Turley & Zaman 2004, p. 322). McMullen (1996, p. 87) suggests there is a need for more research on the differences between companies with and without audit committees.

Turley and Zaman (2004, p. 326) argues that there is 'no automatic relationship' between the existence of an 'audit committee and the achievement of particular governance effects'. Spira (2003, p. 180) suggests that very little proof exists that audit committees represent an effective corporate governance mechanism. McMullen (1996, p. 87) found that companies that had an audit committee produced more reliable financial reports. Other studies have found the existence of an audit committee enhances earnings quality (Wild 1996) and reduced perceived audit risk (Stewart & Munro 2007, p. 51).

Studies conducted on the relationship between independent audit committees and financial performance have produced inconsistent results. Setia-Atmaja (2009) in an Australian study found that independence enhances firm value. Hutchinson, Percy and Erkurtoglu (2008, p. 239) found that independence is associated with lower performance of adjusted discretionary accruals. Chan and Li (2008, pp. 16-18 & 26) studied the top US Fortune 200 public companies in the year 2000 and found a positive relationship between expert-independent directors on boards and audit committees and firm value. Yang and Krishnan (2005) on the other hand claim that the extent of stock ownership by directors on audit committees is positively associated with quarterly earnings management.

McKnight, Milonas, Travlos and Weir (2009), in a UK study following the Cadbury Code reforms, examined the financial data of 228 companies for the years from 1988 (three years before the introduction of the code) to 2001 (three years after the introduction of the code) (McKnight et al. 2009, pp. 26-27). They used two measures of corporate performance: accounting measures and shareholder measures (McKnight et al. 2009). The results of the study were as follows:
1. *The establishment of an audit committee and/or remuneration committee has had a positive impact on corporate performance (McKnight et al. 2009, p. 37).*

2. *Separation of chairman and CEO has not had any impact on corporate performance (McKnight et al. 2009, p. 37).*

3. *Presence of an executive director on an audit committee and/or remuneration committee has had a negative impact on corporate performance (McKnight et al. 2009, p. 37).*

Bozec (2005, p. 1927) suggests that the establishment of board committees does not seem to be connected with performance. Klein (1998, pp. 293-296) found little evidence to suggest that monitoring committees dominated by independent directors affects firm performance. Vafeas and Theodorou (1998) come to the same conclusion using UK data. Weir and Laing (2001) suggested there is little or no empirical evidence to support the proposition that board sub-committees, including audit committees, have a positive impact on corporate governance (Weir & Laing 2001, p. 86). Dulewicz and Herbert (2004, p. 278) in an 1997 UK study concluded that:

> Audit and Remuneration committees appear to have no visible impact, beneficial or otherwise, on company performance (as measured by cash flow return on total assets CFROTA) (Dulewicz & Herbert 2004, p. 278).

Reddy, Locke and Scrimgeour (2010) conducted a study of 50 publicly listed companies on the New Zealand stock exchange following the introduction of the 2004 New Zealand Securities Commission principles and guidelines which aimed to improve corporate governance practices by introducing, amongst other requirements, board committees. The study period of 1999 to 2007 was used to obtain data from before and after the 2004 New Zealand Securities Commission principles and guidelines using Tobin's Q, market to book and return on assets metrics as performance measures (Reddy, Locke & Scrimgeour 2010, p. 196). One of their hypothesis was *‘The presence of an Audit Committee will be positively associated with a company’s financial performance’* (Reddy, Locke & Scrimgeour 2010, p. 196). The study concluded that the ‘coefficient of audit committee (ACOM) is mixed and is not statistically significant, indicating that audit committees do not enhance performance’ (Reddy, Locke & Scrimgeour 2010, p. 214).
Reddy, Locke and Scrimgeour (2011) further studied corporate governance practices in New Zealand public entities and their effect on financial performance. The study included 181 public sector organisations and used data for the period of 2000 to 2007 (Reddy, Locke & Scrimgeour 2011). The dependent variables of return on assets, return on equity, operating income, return on total assets, net revenue to total assets and operating efficiency were used as accounting measures of firm financial performance (Reddy, Locke & Scrimgeour 2011, p. 517 & 530). One of the hypotheses was ‘The presence of an ACOM (Audit Committee) is positively associated with public corporate entities financial performance’ (Reddy, Locke & Scrimgeour 2011, p. 529). The research produced non-significant results for a connection between the existence of an audit committee and financial performance (Reddy, Locke & Scrimgeour 2011, p. 550).

Lama (2011) conducted an Australian comparative study of 100 randomly selected non-top 500 ASX listed companies, of which 50 firms had an audit committee in compliance with ASX recommendation 4.3 and 50 firms did not have an audit committee in non-compliance with ASX recommendation 4.3. The study utilised the financial data of the 100 firms for the period 1 July 2000 to 1 July 2005 and excluded firms that did not have a 30 June reporting date (Lama 2011). Lama (2011) used the performance measure of beta and return on assets and the study tested the following hypotheses relating to audit committees:

\[
H_1: \quad \text{The beta (a measure of stock volatility) is lower for the firms that adopt an audit committee relative to those that do not} \quad \text{(Lama 2011, p. 15).}
\]

\[
H_2: \quad \text{The return on assets (a measure of operating effectiveness and efficiency) are higher for the firms that an audit committee relative to those that do not.} \quad \text{(Lama 2011, p. 16).}
\]

Lama (2011, p. 20) applied a means comparison and regression analysis and found that the ’existence of audit committees does not seem to impact either firm’s stock volatility as measured by beta or its operating efficiency as measured by ROA’.

p. 244). The performance measure of Tobin’s Q was used as the dependent variable and the study tested following hypotheses relating to audit committees (Al-Matari et al. 2012, pp. 243-244):

\[ H_1: \text{There is a positive relationship between the independence of the audit committee members and firm performance (Al-Matari et al. 2012, p. 243).} \]

\[ H_2: \text{There is a positive relationship between the frequencies of audit committee meetings and firm performance (Al-Matari et al. 2012, p. 243).} \]

\[ H_3: \text{There is a positive relationship between the size of the audit committee and firm performance (Al-Matari et al. 2012, p. 244).} \]

The study used a multiple linear regression analyses and concluded that the relationships between independence of the audit committee members and firm performance \( (H_1) \) and the frequency of the audit committee meetings and firm performance \( (H_2) \) were insignificant (Al-Matari et al. 2012, p. 246). However, the relationship between the size of the audit committee and firm performance \( (H_3) \) was significant (Al-Matari et al. 2012, p. 246).

In another study, Hamdan, Sarea and Reyad (2013, p. 32), investigated the relationship between audit committee characteristics of size, financial expertise and independence with three separate measures of: financial performance, operating performance and stock performance. The study included 106 corporations listed on the Amman Stock Exchange and studied their 2008 and 2009 financial data (Hamdan, Sarea & Reyad 2013). Hamdan, Sarea and Reyad (2013, p. 36) used market value added and return on investment to measure financial performance, net profit margin and return on assets to measure operating performance and earnings per share to measure stock performance and tested the following hypotheses:

\[ H_{01}: \text{The audit committee characteristics has no impact, with statistical significance, on the improvement of financial performance (Hamdan, Sarea & Reyad 2013, p. 35).} \]

\[ H_{02}: \text{The audit committee characteristics has no impact, with statistical significance, on the improvement of operating performance (Hamdan, Sarea & Reyad 2013, p. 35).} \]

\[ H_{03}: \text{The audit committee characteristics has no impact, with statistical significance, on the improvement of stock performance (Hamdan, Sarea & Reyad 2013, p. 35).} \]
The study used a multiple regression of ordinary least squares to perform the analyses and concluded that (Hamdan, Sarea & Reyad 2013, p. 40);

\[ H_{01} \]: There was a positive relation with statistical significance between audit committee characteristics and financial performance in the financial sector listed in the Amman stock exchange market (Hamdan, Sarea & Reyad 2013, p. 41).

\[ H_{02} \]: There was a no relation with statistical significance between audit committee characteristics and operational performance in the financial sector listed in the Amman stock exchange market (Hamdan, Sarea & Reyad 2013, p. 41).

\[ H_{03} \]: There was a positive relation with statistical significance between audit committee characteristics and stock performance in the financial sector listed in the Amman stock exchange market (Hamdan, Sarea & Reyad 2013, p. 41).

Aldamen et al. (2012, p. 972) suggest that many of the inconsistent results produced by prior governance research may stem from being conducted under normal market conditions. They conducted their research using a sample of the top 300 companies listed on the ASX in 2008 to test whether the ASX recommendations on audit committees 'mitigate the firm performance impact of significant-adverse-economic events such as the Global Financial Crisis' (Aldamen et al. 2012, p. 971).

The study sample included 120 organisations. Sixty were in the highest-performing quartile of the top 300 firms on the ASX and sixty were in the lowest-performing quartile (Aldamen et al. 2012, p. 979). They obtained stock and financial data from Bloomberg and Huntley databases and the audit committee characteristics from the annual reports of each organisation (Aldamen et al. 2012, p. 979). The data was analysed using cross-sectional logit model, equation (2) (Aldamen et al. 2012, p. 983). The study produced the following results;

1. Smaller audit committees with more experience and financial expertise are more likely to be associated with positive firm performance in the market (Aldamen et al. 2012, p. 971).

3. **Accounting performance is positively impacted where audit committees’ include block holder representation, the chair of the board, whose members have more external directorships and whose chair has more years of managerial experience** (Aldamen et al. 2012, p. 971).

### 2.6.8 Conclusion to Immediate Discipline: Audit Committees

This section reviewed the literature on the immediate discipline of audit committees. The immediate discipline outlined audit committee codes and guidelines, audit committee roles and responsibilities, the independence of audit committees, the effectiveness of audit committees, audit committee best practice and audit committees and corporate performance.

It was established that an 'audit committee is a sub-committee of the board' with delegated authority from the corporation’s board of directors (Spira 1999b, p. 231; Turpin & DeZoort 1998, p. 35). Various codes, reports and legislation have been introduced requiring the creation of an audit committee in an attempt to increase the quality and validity of financial reporting and to reduce agency costs (Pergola 2005, p. 177). Audit committees are now considered as a ‘crucial component of effective corporate governance’ (Psaros 2009, p. 114).

Concerns over fraudulent, biased and poor standards of financial reporting have led to the emergence of independent audit committees (Spira 1999a, p. 262). However, empirical studies on the correlation between independent audit committees and the reliability of financial statements are inconsistent (Petra 2005, p. 58). Similarly, the literature pertaining to audit committee effectiveness has produced ambiguous results (Spira 1999b, p. 233).

Audit committees as a corporate governance mechanism have produced a considerable amount of interest (Stewart & Munro 2007, p. 52). The literature contains various studies pertaining to the relationship of audit committees and corporate performance. These studies have been limited (Hamdan, Sarea & Reyad 2013; Reddy, Locke & Scrimgeour 2010, 2011) and have produced mixed results. McMullen (1996, p. 87) suggests the need for more research on the differences between companies with and without audit committees.
2.7 Research Gap

The literature reviewed covered the disciplines of corporate governance, corporate governance reforms in Australia, corporate boards, executive and non-executive directors and audit committees.

Past research on the correlation between director independence and corporate performance has largely been focused on the independence of directors on corporate boards. International research over the last thirty years has yielded inconclusive results on the correlation between independence of non-executive directors and performance (Chambers 2005a, p. 31; Clifford & Evans 1997, p. 225; Leblanc 2004, p. 440). Research in Australia on the correlation between independent boards and corporate performance was predominantly conducted prior to corporate governance reforms in 2003 and produced negative and inconclusive results (Wang & Oliver 2009, p. 198).

Various codes, reports and legislation have been introduced requiring the existence of audit committees in an attempt to increase the quality and validity of financial reporting (Pergola 2005, p. 177). Audit committee studies have largely focused on; roles and responsibilities of audit committees (Chambers 2005b, p. 96; Harrington 2003, p. 20; Hemraj 2003, p. 153; Hunt & Carey 2001, p. 38; Livingston 2005, p. 24; Petra 2005, p. 58), the independence of audit committee members (Abbott, Park & Parker 2000, p. 55; Brennan & McDermott 2004, p. 325; Clifford & Evans 1997, p. 226; Goodwin 2003, p. 264; McMullen 1996; Petra 2005, p. 58; Song & Windram 2004, p. 195; Spira 1999a, p. 262) and audit committee effectiveness (DeZoort et al. 2002; Spira 1999b).

The literature reviewed in Section 2.6.7 on the correlation between audit committees and corporate performance has been limited and inconclusive and the topic has not been fully explored (Turley & Zaman 2004, p. 322). Since the Australian corporate governance reforms were introduced (Hutchinson, Percy & Erkurtoglu 2008) there has been limited research on the correlation between audit committees and corporate performance. The research (Bozec 2005; Dulewicz & Herbert 2004; Hamdan, Sarea & Reyad 2013; Klein 1998; Lama 2011; McKnight et al. 2009; Reddy, Locke & Scrimgeour 2010, 2011; Vafeas & Theodorou 1998; Weir & Laing 2001) that has been conducted on the correlation between audit committees and corporate performance has produced inconsistent results.
There is a gap in the literature on the correlation between audit committees and corporate performance from an Australian perspective as the current literature does not adequately address the research problem.

2.8 Conclusion

The coverage of this topic required the review of four the parent disciplines of corporate governance, corporate boards, company directors and corporate performance. The immediate discipline of audit committees was also reviewed.

Section 2.2 introduced corporate governance, the first of four parent disciplines. This section provided an overview and brief history of corporate governance, corporate governance theory, the importance of corporate governance and corporate governance reforms in Australia. Section 2.3 reviewed corporate boards, the second parent discipline. This section provided an overview of the roles and functions of corporate boards, the attributes of corporate boards. It also, discussed the effect of board size, board diversity and the delegation of authority to board committees. The third parent discipline of company directors was outlined in Section 2.4. It provided an overview of company directors, their respective duties, the roles and responsibilities of executive directors, and non-executive directors, and the independence of non-executive directors.

Section 2.5 presented the final parent discipline of corporate performance followed by Section 2.6 which reviewed the immediate discipline of audit committees. The immediate discipline outlined audit committee codes and guidelines, audit committee roles and responsibilities, the independence of audit committees, the effectiveness of audit committees, audit committee best practice and the relationship between audit committees and corporate performance. Section 2.7 provided an outline of the research gap in the literature by showing that the current literature does not adequately address the research problem.
3.1 Introduction

This chapter comprises 11 sections, as depicted in Figure 3.1.

**Figure 3.1 – Chapter 3 Outline**

This chapter builds on the methodology outlined in Section 1.6 and commences by restating the research objectives, research problem, research question and research hypotheses in Section 3.2. Section 3.3 outlines the various paradigms which may be
applied and provides a justification for choosing the positivist paradigm. Section 3.4 describes the types of research considered and provides a justification for using empirical exploratory research.

The research methodology used and the justification for choosing a quantitative approach is outlined in Section 3.5. The elements of research design are outlined in Section 3.6. The chapter proceeds by explaining the data collection methods in Section 3.7 and how the data analysis was conducted in Section 3.8. Section 3.9 describes the quality considerations, followed by Section 3.10, which describes the ethical considerations. The concluding remarks are contained in Section 3.11.

### 3.2 The Research

A review of peer-reviewed literature has been completed, together with a review of public documentation, and government and regulatory literature in Chapter 2. No peer-reviewed research has assessed whether there is any relationship between the ASX recommendations on audit committees and the performance of companies listed on the ASX operating in the materials sector.

It is acknowledged that while the primary functions of audit committees are not directed towards corporate performance, there are potentially indirect effects of the audit committee on corporate performance metrics. Therefore, it is valuable for shareholders, legislators, regulators, directors and stakeholders to determine whether, as a result of the ASX recommendations on audit committees, a relationship with performance metrics exists. If such a relationship exists, then further research will be needed to identify how far the audit committee together or in concert with other factors has impacted on performance metrics.

#### 3.2.1 Research Objective

The objective of this study is to determine whether compliance or non-compliance of ASX Recommendations 4.3 as part of Australia’s corporate governance reforms is related to the performance of corporations measured by accounting methods and shareholder value methods. In order to investigate this matter, companies operating in the materials sector and ranked in the top 500 companies listed on the ASX are analysed.
3.2.2 Research Problem

Is there any relationship between compliance with ASX Recommendation 4.3 and corporate performance (for corporations operating in the materials sector that are ranked in the top 500 companies listed on the ASX)?

This research is designed to provide a baseline to measure if any relationship exists between compliance with ASX Recommendation 4.3 and corporate performance among the sample corporations. Millstein and MacAvoy (1998, p. 1318) argue that ‘correlation between governance and performance does not prove causation’ and that causation may be impossible to establish. This research acknowledges that other variables in a corporation’s operations and environment may also have an impact on corporate performance.

3.2.3 Research Question

The research question is designed to provide a framework that directs the data collection and delimits the scope of the research in order to discover whether there is a relationship between compliance with ASX Recommendation 4.3 and corporate performance (Punch 1998). The research question is:

**RQ.** Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, do those that comply with ASX Recommendation 4.3, achieve higher corporate performance?

3.2.4 Research Hypotheses

Research hypotheses are ‘predictions or answers to specific research questions’ that are used to establish ‘differences among groups or the independence of two or more factors’ (Punch 1998, p. 39; Sekaran 1992, p. 98). In parallel with the research question set out in Section 3.2.3, the null (H0) and alternative (H1) research hypotheses are:

**H0.** Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, there is no significant difference in corporate performance between those corporations that do not comply with ASX Recommendation 4.3 and corporations that do comply.
**H1.** Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, there is a significant difference in corporate performance between those corporations that do not comply with ASX Recommendation 4.3 and corporations that do comply.

### 3.3 Research Paradigms

The purpose of this section is to provide an overview of the four scientific paradigms of positivism, realism, critical theory and constructivism that are applicable to social research and further justify the use of the positivist paradigm. In order to justify the appropriate choice of paradigm and methodology, the ontological and epistemological positions held by the researcher are explained.

The term paradigm refers to ‘basic set of philosophical beliefs or worldview’ that guides the researcher on how research is conducted (Guba & Lincoln 1994, p. 107; Perry, Riege & Brown 1999, p. 16; Ticehurst & Veal 2000, p. 25). A paradigm further refers to the progress of scientific practice that utilises techniques and methods that align with the paradigm (Collis & Hussey 2003, p. 46; Ticehurst & Veal 2000, p. 25). Guba and Lincoln (1994) categorise scientific paradigms into four distinctive areas: positivism, realism, critical theory and constructivism. Each paradigm has three elements: ontology, epistemology and methodology (Healy & Perry 2000, p. 119).

Ontology is the ‘reality’ that is being investigated (Healy & Perry 2000, p. 119). Epistemology is the relationship between reality and what we accept as being valid knowledge (Collis & Hussey 2003, p. 48; Sobh & Perry 2006, p. 1194). The methodology is simply the methods and techniques used by the researcher or the method of investigation of that reality (Healy & Perry 2000, p. 119; Sobh & Perry 2006, p. 1194). Patton (1980) suggests that different methods are appropriate for different situations. The ontology, epistemology and methodology that form the theoretical foundations of social research are further described in Table 3.1.
Table 3.1 – Theoretical Foundations of Social Research

<table>
<thead>
<tr>
<th>Element</th>
<th>Deals with</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontology</td>
<td>The nature of reality. Asks: What is the nature of reality? Is it objective (out there), constructed, subjective? Or Better: What does research focus on?</td>
</tr>
<tr>
<td>Epistemology</td>
<td>The nature of knowledge. Asks: How do we know what we know? What is the way in which reality is known to us? Or Better: What kind of knowledge is research looking for?</td>
</tr>
<tr>
<td>Methodology</td>
<td>The nature of research design and methods. Asks: How do we gain knowledge about the world? Or Better: How is research constructed and conducted?</td>
</tr>
<tr>
<td>Research</td>
<td>The execution of research designs.</td>
</tr>
</tbody>
</table>

Source: Sarantakos 2005, p.30

The ontological, epistemological and methodological assumptions which support the four scientific paradigms are summarised in Table 3.2.
## Table 3.2 – Basic Belief Systems of Alternative Enquiry Paradigms

<table>
<thead>
<tr>
<th>Item / Paradigm</th>
<th>Positivism</th>
<th>Realism</th>
<th>Critical Theory</th>
<th>Constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontology</strong></td>
<td><strong>Naive realism:</strong> Reality is real and apprehensible</td>
<td><strong>Critical realism:</strong> Reality is ‘real’ but only imperfectly and probabilistically apprehensive and so triangulation from many sources is required to try to know it</td>
<td><strong>Historical realism:</strong> ‘Virtual’ reality shaped by social, economic, ethnic, political, cultural, and gender values, crystallised over time</td>
<td><strong>Critical relativism:</strong> Multiple local and specific ‘constructed’ realities</td>
</tr>
<tr>
<td><strong>Ontology is ‘reality’</strong></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

| **Epistemology** | **Objectivist:** Findings true | **Modified objectivist:** Findings probably true | **Subjectivist:** Value mediated findings | **Subjectivist:** Created findings |
| **Epistemology is the relationship between reality and the researcher.** | | | | |

| **Methodology** | **Experiments/ Surveys:** Verification of hypothesis: chiefly quantitative methods | **Case Studies / Convergent interviewing:** Triangulation, interpretation of research issues by qualitative and quantitative methods such as structural equation modelling | **Dialogic / dialectical:** Researcher is a ‘transformative intellectual’ who changes the social world within which participants live | **Hermeneutical / dialectical:** Researcher is a ‘passionate participant’ within the world being investigated |
| **Methodology is the technique used by the researcher to discover that reality.** | | | | |

Source: Adapted from Guba and Lincoln 1994, p. 109, Healy and Perry 2000, p. 119, Perry, Riege and Brown 1999, p. 17
The following Sections (3.3.1 to 3.3.4) describe each of the positivist, realist, critical theory, and constructivist paradigms through their respective ontological and epistemological perspectives. A justification for the use of the positivist paradigm is provided in Section 3.3.5.

### 3.3.1 Positivism Paradigm

The ontological position of the positivist paradigm prescribes that reality is real and apprehensible (Guba & Lincoln 1994, p. 109; Healy & Perry 2000, p. 119; Perry, Riege & Brown 1999, p. 17). The key feature of positivism is that reality is external and objective (Easterby, Thorpe & Lowe 1991, p. 22). The epistemological perspective of the positivist paradigm is that the researcher is independent of what is being observed and the researcher studies the object without influencing or being influenced by it (Easterby, Thorpe & Lowe 1991, p. 22; Guba & Lincoln 1994, p. 110). The data and its analysis are value free and do not change (Healy & Perry 2000; Perry, Riege & Brown 1999, p. 17).

The positivist paradigm is suitable for processing data in well-defined narrow studies using statistical and mathematical techniques (Gummesson 2000, p. 181). The research concepts require simplicity and facts are measured using a quantitative approach (Gummesson 2000, p. 181). The positivist paradigm is more relevant to quantitative methods for testing research hypotheses (Guba & Lincoln 1994). This research supports the use of the positivist paradigm and a justification for the use of the positivist paradigm is presented in Section 3.3.5.

### 3.3.2 Realist Paradigm

The ontological position of the realist paradigm, also referred to as the post positivist paradigm, is that reality is assumed to exist and there is a ‘real’ world to discover even if it is imperfectly apprehensible (Guba & Lincoln 1994, p. 110; Healy & Perry 2000, p. 120; Perry, Riege & Brown 1999, p. 18). The realist paradigm does not regard perception as reality, but rather as ‘a window onto reality through which a picture of reality can be triangulated with other perceptions’ (Perry, Riege & Brown 1999, p. 18). The epistemological perspective of the realist paradigm is that objectivity remains a ‘regulatory ideal’ and that findings are probably true if replicated subject to falsification (Guba & Lincoln 1994, p. 110). The researcher is not independent from the research and always remains objective (Perry, Riege & Brown 1999).
The realist paradigm is appropriate for researching complex social phenomena and is appropriate for marketing research (Perry, Riege & Brown 1999, p. 18 and p. 21). The realist paradigm uses both qualitative and quantitative methodologies through case studies, convergent interviewing and structural equation modelling (Guba & Lincoln 1994; Healy & Perry 2000; Perry, Riege & Brown 1999). The realist paradigm is inappropriate for this research as this study uses secondary numerical and historical data to answer the research question and to test the research hypotheses.

3.3.3 Critical Theory Paradigm


According to the epistemological perspective of the critical theory paradigm, the researcher and the subjects of the research are interactively linked and the values of the researcher influence the research (Guba & Lincoln 1994, p. 110). These values are therefore value dependent rather than value free (Guba & Lincoln 1994; Perry, Riege & Brown 1999). The critical theory research paradigm requires dialogue between the researcher and the subject to fulfil the aims of liberating people from their prior mental, emotional and social structures (Guba & Lincoln 1994, p. 110; Healy & Perry 2000, p. 119; Perry, Riege & Brown 1999, p. 18). The critical theory paradigm is not suitable for this research as the researcher and the research itself have no direct interaction with people for the purpose of transforming them.

3.3.4 Constructivism Paradigm

The final paradigm considered is constructivism. The ontological position of the constructivist paradigm is that there are multiple realities which are socially and experimentally based and represent the mental construction of individual persons (Guba & Lincoln 1994, p. 110; Healy & Perry 2000, p. 120; Perry, Riege & Brown 1999, p. 18). The epistemological perspective of the constructivist paradigm is that the researcher is required to be a ‘passionate participant’ and is interactively linked to the respondents (Guba & Lincoln 1994, p. 111; Healy & Perry 2000, p. 120). The constructivist paradigm is
more suitable for social science research into topics such as religion, beauty or prejudice rather than business research that is concerned with the 'real', economic and technological dimensions of business (Healy & Perry 2000, p. 120; Perry, Riege & Brown 1999, p. 18).

3.3.5 Justification for Choosing the Positivist Paradigm

The realist paradigm is inappropriate for this research as this study uses secondary numerical and historical data to answer the research question and test the research hypotheses. The critical theory paradigm is also not suitable as the researcher and the research itself have no direct interaction with people for the purpose of transforming them. The constructivist paradigm is also not suitable as the researcher is not an active participant who is linked to the respondents being studied and the research does not employ an inductive approach (Sarantakos 2005). The constructivist paradigm is more suitable for qualitative research where the researcher considers ‘reality to be subjective, constructed, multiple and diverse’ (Creswell 2003, p. 18; Sarantakos 2005, p. 41).

In consideration of the research problem, research objectives, research question and research hypotheses, a positivist approach was selected for this study. The data acquisition does not require access to human respondents or subjects and the researcher is independent of what is being observed. The researcher does not influence and is not influenced by the subjects of the study. This study utilises secondary numerical and historical data to answer the research question and test the hypotheses utilising a quantitative approach which is representative of the positivist paradigm.

3.4 Types of Research

The purpose of this section is to provide an overview of the three main research types considered applicable to social research: descriptive, empirical explanatory and causal research and further justifies the use of empirical exploratory research. Research can be for the purpose of discovery or to advance knowledge by way of explanation and/or to test hypotheses (Sekaran 1992, p. 94; Ticehurst & Veal 2000, p. 4). The type of research is determined by the level of advancement of knowledge in the research area (Sekaran 1992, p. 94).
3.4.1 Descriptive Research

Descriptive research aims to identify and describe, but not explain the characteristics of variables in certain situations (Sarantakos 2005, p. 10; Sekaran 1992, p. 96; Ticehurst & Veal 2000, p. 5; Zikmond 1997, p. 40). The research problem in descriptive studies is well structured and understood with precise rules and procedures (Ghauri & Gronhaug 2002, p. 49). The objective of descriptive research is to describe events and situations as they exist for the purpose of identifying and obtaining information about a particular research problem (Collis & Hussey 2003; Saunders, Lewis & Thornhill 2000). Descriptive research can often include more than one variable to answer the research question (Ghauri & Gronhaug 2002, p. 50). The data relevant to descriptive research is often quantitative and suitable for analysis using statistical software such as the Statistical Package for Social Sciences (SPSS) (Collis & Hussey 2003; Zikmond 2003).

3.4.2 Empirical Exploratory Research

Empirical exploratory research is undertaken where not much is known about the research problem as a result of very few or no earlier studies having been conducted (Collis & Hussey 2003, p. 10; Ghauri & Gronhaug 2002, p. 48; Sekaran 1992, p. 95). Exploratory research aims to move beyond description and explain trends or events by looking for patterns. (Collis & Hussey 2003, p. 10; Sarantakos 2005, p. 11; Ticehurst & Veal 2000, p. 5). Exploratory research requires extensive preliminary work to gain familiarity and a better understanding of the phenomena at hand (Sekaran 1992, p. 95). Exploratory research promotes understanding of the research problem and advances knowledge by building theory (Sekaran 1992, p. 95).

3.4.3 Causal Research

The final research type considered is causal research. Casual research goes further than describing characteristics and exploring factors (Collis & Hussey 2003, p. 11). Causal research aims to measure a cause and effect relationship between given variables (Collis & Hussey 2003, p. 11; Ghauri & Gronhaug 2002, p. 50; Sarantakos 2005, p. 11).
3.4.4 Justification for Choosing Empirical Exploratory Research

Given the research problem, research objectives and research question, empirical exploratory research is appropriate for this study. This study utilises empirical exploratory research to examine, whether as a result of the establishment of the ASX recommendations on audit committees, there is a relationship between compliance with the recommendations and corporate performance metrics. The data used is secondary numerical and historical and it is used to answer the research question and test the research hypotheses utilising a quantitative approach. A positivist approach and an empirical exploratory research were selected for this study. The use of a quantitative methodology is appropriate for this study as justified in the Section 3.5.2.

3.5 Research Methodology

The two main types of research methodology considered for this research are qualitative and quantitative. The purpose of this section is to provide an overview of qualitative and quantitative methodologies and to further justify the use of a quantitative methodology.

The significant differences between qualitative research and quantitative research are that qualitative research uses numbers to test theories and qualitative research uses words and meaning to build theories (Gummesson 2003, p. 485; Sobh & Perry 2006, p. 1194). The choice of methodological approach is dependent on the research problem (Davis 2005, p. 306). The differences are further illustrated in Table 3.3.
### Table 3.3 – Comparisons of Quantitative and Qualitative Research Characteristics

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Quantitative Methodology</th>
<th>Qualitative Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reality is</strong></td>
<td>Objective, ‘out there’, to be ‘found’</td>
<td>Subjective, in people’s minds</td>
</tr>
<tr>
<td></td>
<td>Perceived through the senses</td>
<td>Perceived not through senses only</td>
</tr>
<tr>
<td></td>
<td>Perceived uniformly by all</td>
<td>Diverse: perceived differently</td>
</tr>
<tr>
<td></td>
<td>Governed by universal laws</td>
<td>Created, constructed: not found</td>
</tr>
<tr>
<td></td>
<td>Based on integration</td>
<td>Interpreted differently by people</td>
</tr>
<tr>
<td><strong>Human beings are</strong></td>
<td>Rational individuals</td>
<td>Creators of their world</td>
</tr>
<tr>
<td></td>
<td>Obeying external laws</td>
<td>Makings sense of their world</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not restricted by external laws</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Creating systems of meanings</td>
</tr>
<tr>
<td><strong>Science is</strong></td>
<td>Based on strict rules and procedures</td>
<td>Based on common sense and reason</td>
</tr>
<tr>
<td></td>
<td>Deductive</td>
<td>Inductive</td>
</tr>
<tr>
<td></td>
<td>Relying on sense impressions</td>
<td>Relying on interpretation</td>
</tr>
<tr>
<td></td>
<td>Objective and value free</td>
<td>Subjective and not value free</td>
</tr>
<tr>
<td><strong>Social Research</strong></td>
<td>Employs quantitative methods</td>
<td>Employs qualitative methods</td>
</tr>
<tr>
<td></td>
<td>Aims to explain social life</td>
<td>Aims to interpret social life</td>
</tr>
<tr>
<td></td>
<td>Aims to predict the course of events</td>
<td>Aims to understand social life</td>
</tr>
<tr>
<td></td>
<td>Aims to discover social regularities</td>
<td>Aims to discover people’s meanings</td>
</tr>
</tbody>
</table>

*Source: Sarantakos 2005, p. 42*

#### 3.5.1 Quantitative Research

In contrast to qualitative methods, quantitative research methods rely on numerical data that is analysed to draw conclusions and/or to test hypothesis (Ticehurst & Veal 2000, p. 20 & 21). The data provides comparisons and predictions which are statically valid (Neuman 2000; Ticehurst & Veal 2000; Zikmond 2003).

In quantitative methodologies, the theoretical underpinnings are synonyms of the positivist paradigm and the researcher ‘perceives reality to be objective, simple and fixed’ (Creswell 2003, p. 18; Guba & Lincoln 1994; Healy & Perry 2000; Perry, Riege & Brown 1999; Sarantakos 2005, p. 31). Human beings are perceived as ‘rational individuals who are governed by social laws’ and science is based on strict rules and procedures (Sarantakos 2005, p. 32).
The data is generally highly specific and precise and is gathered to specifically answer research questions and/or test research hypotheses (Collis & Hussey 2003; Creswell 2003; Guba & Lincoln 1994). Hypotheses are predictions and the researcher normally draws positive, negative or null conclusions indicating whether there is a significant relationship between the variables (Creswell 2003, p. 116).

Quantitative methods are applicable to a wide range of studies and can be applied within a reasonable time and at a relatively low cost (Easterby, Thorpe & Lowe 1991, p. 32). The disadvantages of quantitative methods are consistent with those of the positivist paradigm (Sarantakos 2005). Sarantakos (2005, pp. 34-35) suggests the following critique of the positivist paradigm and quantitative methodologies:

i. Reality is an interpretive social action and is not objective and outcomes are closer to the researcher’s belief than those embedded in reality (Sarantakos 2005, p. 34);

ii. Quantitative methods perceive reality in measurable attributes which produce a ‘peculiar and biased perception of the world’ and that objectivity leads to ‘technocratic and bureaucratic dehumanisation’ (Sarantakos 2005, p. 35);

iii. Where hypothesis are stated prior to the research outcomes they become biased and the research is limited to the approach and such approaches dictate what can or cannot be researched (Sarantakos 2005, p. 35).

3.5.2 Justification for Choosing Quantitative Research

A qualitative methodology is not appropriate for this research as this study utilises secondary numerical and historical data to answer the research question and test hypotheses. The data required for this research is highly specific and does not require open-ended emerging data and cannot be collected using techniques such as observation, informal in-depth interviews grounded theory or case studies.

This research adopts the use of the positivist paradigm and a quantitative research methodology in light of the research problem, research objectives, research question and research hypotheses. This study utilises secondary numerical and historical data to answer the research question and test highly specific hypotheses utilising a quantitative approach which is representative of the positivism paradigm.
The data acquisition does not require access to human respondents or subjects and the researcher is independent of what is being observed without influencing or being influenced by it. The data and its analysis are intended to provide comparisons and predictions which are statistically valid, are value free and do not change. The research enables the data to be measured using a quantitative methodology.

This study utilises empirical exploratory research to examine whether, as a result of the establishment of the ASX Recommendations on audit committees, there is a relationship between compliance with the recommendations and performance metrics. It does not seek to establish, explore or seek a cause and effect relationship. Rather, it is designed to discover if any relationship exists in corporations that comply with ASX recommendation 4.3 and corporate performance.

3.6 Research Design

There is considerable debate on what constitutes optimal research design (Zikmond 1997). The purposes of this section are to provide an outline of the study period, the entity selection process, and the selection of variables to be studied, and to further define the board and audit committee variables and corporate performance measures utilised in this study.

The choice of research design is representative of the overall research strategy to obtain the information required (Ghauri & Gronhaug 2002, p. 47). Its aim is to clearly answer the research question through the research activity (Easterby, Thorpe & Lowe 1991). This design strategy was chosen to develop the means by which the collection of data answers the specific research question and tests research hypotheses (Davis 2005, p. 134).

The data collection and data analysis is outlined in Sections 3.7 and 3.8.

3.6.1 Study Period and Data

The study period in this research is derived from use of annual reports of corporations for the years ended 30 June 2006, 30 June 2007 and 30 June 2008. The data includes board characteristics, audit committee characteristics and financial data for corporations ranked in the top 500 companies (by market capitalisation) listed on the ASX operating in the materials sector.
3.6.2 Entity Selection Process

In order to provide consistency, validity and reliability and minimise the complexity of this study, only corporations operating in the same Global Industry Classification Standard (GICS) sector were included. The ASX categorises each corporation into a GICS sectors. Table 3.4 illustrates the GICS sector breakdown of the top 500 hundred corporations listed of the ASX.

Table 3.4 – Top 500 GICS Sector Breakdown

<table>
<thead>
<tr>
<th>GICS Sector</th>
<th>No. Companies</th>
<th>% of Total Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financials</td>
<td>132</td>
<td>26.40</td>
</tr>
<tr>
<td>Materials</td>
<td>97</td>
<td>19.40</td>
</tr>
<tr>
<td>Consumer Discretionary</td>
<td>56</td>
<td>11.20</td>
</tr>
<tr>
<td>Industrials</td>
<td>76</td>
<td>15.20</td>
</tr>
<tr>
<td>Health Care</td>
<td>25</td>
<td>5.00</td>
</tr>
<tr>
<td>Consumer Staples</td>
<td>21</td>
<td>4.20</td>
</tr>
<tr>
<td>Information Technology</td>
<td>19</td>
<td>3.80</td>
</tr>
<tr>
<td>Energy</td>
<td>51</td>
<td>10.20</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>7</td>
<td>1.40</td>
</tr>
<tr>
<td>Utilities</td>
<td>16</td>
<td>3.20</td>
</tr>
<tr>
<td>Total</td>
<td>500</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Adapted from Morningstar Australasia Pty Ltd 2009, p. xv

Corporations operating in the materials sector trade in a wide range of products. Table 3.5 provides a list of industry and sub-industry products and sectors in which these corporations trade.
Table 3.5 – Materials Sector Industry and Sub-Industry Breakdown

<table>
<thead>
<tr>
<th>Industry</th>
<th>Sub-Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals</td>
<td>Commodity Chemicals, Diversified Chemicals, Fertilisers and Agricultural Chemicals, Industrial Gases, and Specialty Chemicals</td>
</tr>
<tr>
<td>Construction Materials</td>
<td>Construction Materials</td>
</tr>
<tr>
<td>Containers and Packaging</td>
<td>Metal and Glass Containers and Paper Packaging</td>
</tr>
<tr>
<td>Metals and Mining</td>
<td>Aluminium, Diversified Metals and Mining, Gold, Precious Metals and Minerals, and Steel</td>
</tr>
<tr>
<td>Paper and Forest Products</td>
<td>Paper and Forest Products</td>
</tr>
</tbody>
</table>

Source: ASX 2008

Consideration was given to a number of sectors prior to selecting corporations operating in the materials sector. The materials sector comprised 97 corporations, representing 19.4% of the top 500 companies on the ASX. The 54 corporations that form part of this study provided a reasonable representation (as illustrated in Table 3.6) in each of the top 100, 200, 300 and 500 rankings by market capitalisation listed on the ASX.

Table 3.6 – Ranking Breakdown of the Top 500 Companies

<table>
<thead>
<tr>
<th>Ranking</th>
<th>No. Companies</th>
<th>% of Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 100</td>
<td>8</td>
<td>14.81</td>
</tr>
<tr>
<td>Top 200</td>
<td>4</td>
<td>7.41</td>
</tr>
<tr>
<td>Top 300</td>
<td>24</td>
<td>44.45</td>
</tr>
<tr>
<td>Top 500</td>
<td>18</td>
<td>33.33</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Developed for this research
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3.6.3 Selection of Variables Studied

Cochran and Wood (1984, pp. 44-45) argue that there is no consensus on what is a proper measure of financial performance, and that such measures fall into the two categories of investor returns and accounting returns (Dalton & Kesner 1985, p. 753). There are a large number of variables that could be used to determine corporate performance measures. (Dalton & Kesner 1985, p. 753). Table 3.7 lists the various independent and dependent variables that form part of this study. They are further detailed in Sections 3.6.4 and 3.6.5.

The independent variables for compliance with ASX Recommendation 4.3, the size of the board and CEO remuneration were drawn from annual reports of corporations for the years ended 30 June 2006, 30 June 2007 and 30 June 2008, and only corporations with consistent structures for the three years were selected for this study. The data representing the Australian GDP was obtained from the World Bank website and the All Ordinaries values were obtained from the ASX Website. The corporate performance variables over the same period were collected so as there was no lag in the design.

Table 3.7 – Variables Studied

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Corporate Performance Dependent Variables (Accounting Measures)</th>
<th>Corporate Performance Dependent Variables (Shareholder Measures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance with ASX Rec. 4.3. (COMPLY)</td>
<td>Reported Net Profit $mil – (RNP)</td>
<td>+/- Market % – (M)</td>
</tr>
<tr>
<td>The size of the board (TOTALDIR)</td>
<td>Return on Assets % – (ROA)</td>
<td>Price / Earnings Ratio – (PER)</td>
</tr>
<tr>
<td>Gross Domestic Product (GDP)</td>
<td>Return on Equity % – (ROE)</td>
<td>Price / Cash Flow Ratio – (PCFR)</td>
</tr>
<tr>
<td>All Ordinaries Index (ALLORDS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEO Remuneration (CEOPAY)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.6.4 Independent Variables

In order to determine which corporations that are listed on the ASX operating in the materials sector should be included in this study, it was necessary to compile and extract board and audit committee data from each of the 97 corporations.
The annual reports of 97 corporations for years ended 30 June 2006, 30 June 2007 and 30 June 2008 were analysed. A total of 291 annual reports were analysed to extract and compile data for the variables contained in Sections 3.6.4.1, 3.6.4.2 and 3.6.4.5. The data representing the Australian GDP in Section 3.6.4.3 was obtained from the World Bank website. The All Ordinaries values were obtained from the ASX Website.

3.6.4.1 Compliance with ASX Recommendation 4.3 – (COMPLY)

Some of the corporation’s annual reports declared their compliance with ASX Recommendation 4.3. If such a declaration was not found, then it was necessary to establish whether the audit committee consisted of only non-executive directors, whether it had a majority of independent directors, whether it had an independent chairperson who was not chairperson of the board, and whether it had at least three members (ASX Corporate Governance Council 2003, 2007, 2010, 2014). The study included 30 corporations that complied with Recommendation 4.3 and 24 that did not comply. The corporations that complied with Recommendation 4.3 were assigned a binary number of 1 and the corporations that did not comply with Recommendation 4.3 were assigned a binary number of 0.

3.6.4.2 The Size of the Board – (TOTALDIR)

It was necessary to establish the number of directors on the board of the corporation in order to determine if the corporation had at least three directors and to further establish whether or not they complied with ASX Recommendation 4.3. The data for the total number of directors (executive and non-executive) listed on the board were extracted from the annual reports for each corporation studied for the given year.

3.6.4.3 Gross Domestic Product – (GDP)

Gross Domestic Product (GDP) is the monetary value at a specific time period for all goods and services produced by a nation (Samuelson et al. 1992). GDP is an indicator of a nation's economic performance and underlying economic growth (Samuelson et al. 1992). The data representing the Australian GDP for the years ending June 2006, June 2007 and June 2008 were obtained from the World Bank website. The reported Australian GDP is presented as a US dollar amount rounded to the nearest million dollars for each June quarter for the years 2006, 2007 and 2008.
3.6.4.4 All Ordinaries Index – (ALLORDS)

The All Ordinaries Index (ALLORDS) is a market indicator of performance (driven by expectations of future economic growth) representing the performance of the top 500 companies listed on the ASX (Parliament of Australia 2015). The ASX All Ordinaries Index is the reported market capitalisation figure for the top 500 companies listed on the ASX for each of the years ending 30 June 2006, 30 June 2007 and 30 June 2008.

3.6.4.5 CEO Remuneration – (CEOPAY)

The total remuneration is the total dollar value paid for each CEO which includes salary, bonuses, super, leave entitlements, options, and any other financial entitlements. This information was sourced from the annual reports for each respective corporation included in the study for the years ending 30 June 2006, 30 June 2007 and 30 June 2008. The total value of remuneration paid to the CEO of a corporation is representative of the management skill level of the CEO and its effect on corporate performance.

3.6.5 Corporate Performance Dependent Variables

The corporate performance variables are divided into accounting measures and shareholder measures which provides for triangulation in data analysis. The accounting measures data primarily involves accounting returns as a measure of financial performance influenced by different accounting returns (Cochran & Wood 1984, p. 46).

The shareholder data performance measures represents the perspective of investors or shareholders (Cochran & Wood 1984, p. 45). This study uses the Price/Earnings Ratio, Price/Cash flow Ratio and the positive or negative percentage measure of performance between the stock and the overall market.

3.6.5.1 Corporate Performance Accounting Measure Dependent Variables

The Corporate Performance Accounting Measure dependent variables studied are:
3.6.5.1.1 Reported Net Profit $mil – (RNP)

Net profit is the corporation’s income less expenses (Birt et al. 2008, p. 209). Operating revenue in the context of this research represents ‘net operating profit after tax, minorities, preference dividends, significant and non-recurring items’ (Morningstar Australasia Pty Ltd 2009, p. xii). The reported net profit is expressed to the nearest million dollars.

3.6.5.1.2 Return on Assets % – (ROA)

The return on assets ratio is a profitability measure of a corporation’s ‘ability to convert sales revenue into profit, and its ability to generate income from its asset investments’ (Birt et al. 2008, p. 289). The return on assets ratio is expressed as a percentage. It is calculated as earnings before net interest (interest revenue less interest expense) and tax divided by average total assets multiplied by 100 (Morningstar Australasia Pty Ltd 2009, p. xiii). A higher return on assets ratio reflects more effective trading through profitability and asset efficiency (Birt et al. 2008, p. 290; Cooper et al. 1997, p. 230).

3.6.5.1.3 Return on Equity % – (ROE)

The return on equity ratio is a measure of the profit made by the corporation on its total equity (Birt et al. 2008, p. 289). The return on equity ratio is expressed as a percentage and is calculated as net operating profit after tax and after minorities and preference dividends divided by shareholder equity multiplied by 100 (Morningstar Australasia Pty Ltd 2009, p. xiii & xviii). The return on equity ratio examines the return on the owner’s investment and reflects the direction of corporation’s profitability, asset efficiency and capital structure (Bazley, Hancock & Porter 2010, p. 428; Birt et al. 2008, p. 289; Cooper et al. 1997, p. 231).

3.6.5.2 Corporate Performance Shareholder Measure Dependent Variables

The Corporate Performance Shareholder Measure dependent variables studied are:
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3.6.5.2.1 +/- Market % – (M)

The plus or minus (+/-) market figure represents the positive or negative percentage 'performance between the stock and the overall market' (Morningstar Australasia Pty Ltd 2009, p. xvii). The +/- market figure is expressed as a percentage.

3.6.5.2.2 Price / Earnings Ratio – (PER)

The price earnings ratio is a market value indicator that represents the number of years of earnings it would take to repay the purchase price at the current market price (Birt et al. 2008, p. 305). Effectively it provides for the market’s assessment of the corporation's future performance in comparison to the current market price (Birt et al. 2008, p. 305). It is calculated as the current market price divided by the reported earnings per share before non-recurring items (Morningstar Australasia Pty Ltd 2009, p. xix).

3.6.5.2.3 Price / Cash Flow Ratio – (PCFR)

The price / cash flow ratio is calculated as the ‘closing stock price as at the end of the fiscal year (30 June) divided by the cash flow per share of the latest fiscal year’ (Morningstar Australasia Pty Ltd 2009, p. xix).

3.6.6 Justification of Variables Used

The selected board and audit committee variables were needed to establish if the corporations complied with ASX recommendation 4.3. Including only corporations operating in the same Global Industry Classification Standard (GICS) sector provided consistency, validity and reliability and reduced the complexity of this study to a manageable level.

The number of financial performance measures that could be used is infinite (Dalton & Kesner 1985, p. 753). There is no consensus on what is a proper measure of financial performance and such measures fall into the two categories of investor returns and accounting returns (Dalton et al. 1998, p. 275; Dalton & Kesner 1985, p. 753). Measures of financial performance have used accounting-based indicators, market-based indicators and a combination of both (Dalton et al. 1998, p. 274). Table 3.8 provides a summary of performance measures used in various studies and shows that there is no consistency in the variables used.
Table 3.8 – Summary of Performance Measures used in Various Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Origin</th>
<th>Study Size</th>
<th>Study Period</th>
<th>Analysis</th>
<th>Performance Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baysinger and Butler 1985</td>
<td>US</td>
<td>266</td>
<td>1970 &amp; 1980</td>
<td>Cross Lagged Regression Analysis</td>
<td>Relative Financial Performance = Return on Equity divided by Average Return on Equity in same Industry</td>
</tr>
<tr>
<td>Bozec 2005</td>
<td>Canada</td>
<td>25</td>
<td>1976-2000</td>
<td>Univariate Analysis &amp; Multiple Regression Analysis</td>
<td>Return on Assets, Return on Sales, Sales Efficiency, Net Income Efficiency &amp; Assets Turnover</td>
</tr>
<tr>
<td>Chan and Li 2008</td>
<td>US</td>
<td>200</td>
<td>2000</td>
<td>Full Information Maximum Likelihood Estimation</td>
<td>Profit &amp; Revenue, Holding Period Return &amp; Tobin’s Q</td>
</tr>
<tr>
<td>Dey 2008</td>
<td>US</td>
<td>371</td>
<td>2000-2001</td>
<td>Regression Analysis</td>
<td>Return on Assets, R&amp;D divided by sales &amp; Plant &amp; Equipment divided by Total assets</td>
</tr>
<tr>
<td>Hutchinson, Percy and Erkurtoglu 2008</td>
<td>Australia</td>
<td>200</td>
<td>2000 &amp; 2005</td>
<td>Cross Section Regression Analysis</td>
<td>Total Assets, Return on Assets Loss &amp; Common Equity to Book Value Gearing</td>
</tr>
<tr>
<td>Kiel and</td>
<td>Australia</td>
<td>348</td>
<td>1996</td>
<td>One Tail</td>
<td>Tobin’s Q, Return on Assets</td>
</tr>
<tr>
<td>Study</td>
<td>Origin</td>
<td>Study Size</td>
<td>Study Period</td>
<td>Analysis</td>
<td>Performance Measures</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------</td>
<td>------------</td>
<td>--------------</td>
<td>---------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Nicholson 2003</td>
<td></td>
<td></td>
<td></td>
<td>Significance Tests</td>
<td>&amp; Market to Book Ratio</td>
</tr>
<tr>
<td>Lawrence and Stapledon 1999</td>
<td>Australia</td>
<td>100</td>
<td>1985-1995</td>
<td>Regression Analysis &amp; Ordinary Least Squares</td>
<td>Total Assets, Revenue, EBIT, Net Profit, Total Employees, Gross Cash Flow, Ratio of Revenue to Assets, Ratio of Net profit to Revenue &amp; Ratio of Gross Cash Flow to Revenue</td>
</tr>
<tr>
<td>Wang and Oliver 2009</td>
<td>Australia</td>
<td>243</td>
<td>2003</td>
<td>Correlation Analysis &amp; Ordinary Least Squares Regression</td>
<td>Dividend Payout Leverage &amp; Diversification Prior Performance = Incorporating Capital Gains &amp; Dividend Payout</td>
</tr>
<tr>
<td>Weir and Laing 2001</td>
<td>UK</td>
<td>320</td>
<td>1995-1996</td>
<td>Not stated</td>
<td>Return on Assets</td>
</tr>
</tbody>
</table>

This study utilises both accounting measures and shareholder measures to enable triangulation in data analysis. The accounting and shareholder measures were selected.
based on the availability of the data and to ensure the data answers the specific research question and testing of the research hypotheses. The six dependent variables used in this study do not all flow from stakeholder theory and have not yielded similar findings. The COMPLY variable is the only categorical variable contained in each of the six models tested. As not all or a mixture of the variables are categorical, no further discussion or justification is applicable.

The theoretical justification for selection of these variables is mixed. Agency theory and stakeholder theory have different disciplinary perspectives (Psaros 2009, p. 14). Financial performance metrics are derived from agency theory, which emerge from the fields of finance and economics (Psaros 2009, p. 14; Solomon 2007, p. 16). In contrast, the stakeholder theory perspective of corporate governance is more socially orientated and 'morally' driven (Psaros 2009, p. 14; Solomon 2007, p. 16).

A theoretical framework derived only from stakeholder theory dependent variables is not suitable for this study. Stakeholder theory does not have a robust theoretical framework linking financial performance variables to stakeholder objectives as stakeholder theory is primarily concerned with alternative non-financial measures that are not the subject of this study (Solomon 2007).

3.7 Data Collection

This section provides an overview of the data collection methods and justifies the use of those methods.

3.7.1 Data Collection Methods

This study utilises secondary numerical and historical data to answer the research question and test the research hypothesis utilising a quantitative approach which is representative of the positivist paradigm. The data needs to be highly specific and precise (Collis & Hussey 2003, p. 57). The researcher began collecting data in June 2009 for the financial years ended 30 June 2006, 30 June 2007 and 30 June 2008 to ensure the study represented the most current data at that time. Three years of data was collected in order to measure corporate performance across the variables.

The data was derived predominantly from the annual reports of corporations for the years ended 30 June 2006, 30 June 2007 and 30 June 2008 and from the 2009 publication
'Morningstar Shareholder, The Handbook of Australia’s Top 500 Companies’ (Morningstar Australasia Pty Ltd 2009). The data collected included board characteristics, audit committee characteristics and financial data for the 97 corporations ranked in the top 500 companies (by market capitalisation) listed on the ASX operating in the materials sector.

The 97 companies listed on the ASX operating in the materials sector were identified by the GICS Code. The annual reports of the 97 identified corporations for the years ended 30 June 2006, 30 June 2007 and 30 June 2008 were all analysed. A total of 291 annual reports were analysed to extract and compile data. The data was analysed and coded for the purpose of exclusion as described in Table 3.9.

**Table 3.9 – Reasons for Excluding Corporations from Study**

<table>
<thead>
<tr>
<th>Code</th>
<th>Reason</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Financial data available for year ended 30 June 2006 and/or 30 June 2007 and/or 30 June 2008 (missing data).</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Companies that did not have a fiscal year end reporting date of 30 June.</td>
<td>28</td>
</tr>
<tr>
<td>3</td>
<td>Companies that had inconsistent Board and Audit Committee variables.</td>
<td>7</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td><strong>43</strong></td>
</tr>
</tbody>
</table>

The data for the remaining 54 corporations involved in this study were analysed and transcribed onto a data collection template for each corporation. Where corporations did not have their annual reports available on their websites, those companies were contacted and the annual reports were forwarded to the researcher by email. The board and audit committee variables were coded to identify compliance with ASX Recommendation 4.3. When all the data was transcribed onto the corresponding data collection template, the data was then formatted into an Excel spreadsheet in preparation for analysis.

### 3.7.2 Justification of Data Collection Methods

The data was predominantly derived from the annual reports of corporations for the years ended 30 June 2006, 30 June 2007 and 30 June 2008 and from the 2009 publication ‘Morningstar Shareholder, The Handbook of Australia’s Top 500 Companies’ (Morningstar Australasia Pty Ltd 2009). Section 296 of the *Corporations Act* 2001 requires entities to comply with Australian Accounting Standards and provide a true and fair view of their financial statements (Ford, Austin & Ramsey 2003, p. 494). Their financial statements must be also independently audited (Redmond 2005, p. 696). Other studies that have
used the annual reports of corporations and publications similar to 'Morningstar Shareholder, The Handbook of Australia’s Top 500 Companies’ (Morningstar Australasia Pty Ltd 2009) are presented in Table 3.10.

**Table 3.10 – Summary of Studies that have used Annual Reports and Publications**

<table>
<thead>
<tr>
<th>Studies</th>
<th>Annual Reports and Publications Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldamen et al. 2012</td>
<td>Annual Reports</td>
</tr>
<tr>
<td></td>
<td>Bloomberg and Aspect Huntley Databases</td>
</tr>
<tr>
<td>Kiel and Nicholson 2003</td>
<td>Annual Reports</td>
</tr>
<tr>
<td></td>
<td>‘Huntley’s Shareholder: The Handbook of Australia’s Public Companies’</td>
</tr>
<tr>
<td></td>
<td>‘The Business Who’s Who of Australia’</td>
</tr>
<tr>
<td>McCabe and Nowak 2008</td>
<td>‘The Business Who’s Who of Australia’</td>
</tr>
<tr>
<td>Muth and Donaldson 1998</td>
<td>Annual Reports</td>
</tr>
<tr>
<td></td>
<td>ASX Announcements</td>
</tr>
<tr>
<td>Wang and Oliver 2009</td>
<td>Annual Reports using Connect 4 Database</td>
</tr>
<tr>
<td></td>
<td>‘Huntley’s Shareholder: The Handbook of Australia’s Public Companies’</td>
</tr>
<tr>
<td></td>
<td>Financial Analysis Database</td>
</tr>
</tbody>
</table>

3.8 Data Analysis

The following section provides an outline of the software used to analyse the data collected and explain panel data estimation, the method of analysis, its various regression analysis models will be described and a justification for the use of panel data estimation.

3.8.1 Software Used for Data Analysis

The software used to analyse the data collected is EViews Student Version 8. EViews is a windows based reliable and commercially available statistical software package designed specifically for time series regression analysis (Salvatore & Reagle 2002).
3.8.2 Panel Data Estimation

Panel data estimation is a regression analysis statistical technique that combines both time-series data and cross-section data to explain the movements in one dependent variable and a set of other independent variables (Gujarati & Porter 2009; Studenmund 2011). Time-series data 'observes one or more variable over a period of time' and 'cross-section data measure values of one variable at the same point in time (Gujarati & Porter 2009, p. 591). Effectively, 'panel data has both space as well as time dimensions' (Gujarati & Porter 2009, p. 591) which allows for analytical solutions that can't be achieved using time-series or cross-section data analysis alone (Studenmund 2011, p. 526).

Panel data estimation is widely used in economic research (Gujarati & Porter 2009). Baltagi (2008) suggests the following advantages of using panel data estimation:

1. Panel data estimation allows for individual heterogeneity where time-series or cross-section data analysis does not and by not doing so, risks the results being biased (Baltagi 2008, p. 6).

2. By combining time-series and cross-section observations, panel data allows for 'more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency' (Baltagi 2008, p. 7).

3. Panel data is better suited to study the dynamics of adjustment or change when studying a repeated cross-section of observations (Baltagi 2008, p. 7).

4. Panel data is better suited to 'identify and measure effects that are simply not detectable in pure cross-section or pure time-series data' (Baltagi 2008, p. 8).

5. Panel data allows to 'construct and test for more complicated behavioural models than purely cross-section or time-series data' (Baltagi 2008, p. 8).

6. Panel data allows for more accurate measurement of variables and can reduce or eliminate bias resulting from aggregation (Baltagi 2008, p. 8).

Effectively, 'panel data can enrich empirical analysis' in ways that may not be available with the use of cross-sectional or time-series data alone (Gujarati & Porter 2009, p. 593). On the other hand, panel data estimation has the following limitations; 'design and data
collection problems', 'distortions of measurement errors' and 'selectively problems' (Baltagi 2008, pp. 8-9). There are several alternative panel data estimation models that can be used. The following Sections (3.8.2.1 to 3.8.2.3) outline the pooled model, the fixed effects model and the random effects model. Section 3.8.2.4 will outline the Hausman test followed by Section 3.8.4 which provides a justification for using panel data estimation to analyse the data.

3.8.2.1 Pooled Model

The pooled model also referred to as the pooled ordinary least squares model, 'pools' all the observations and estimates, neglecting the cross-sectional and time series elements of the data (Gujarati & Porter 2009). The problem with this model is that it assumes that there is no distinction between the entities studied and therefore 'camouflages the heterogeneity' of those entities (Gujarati & Porter 2009, p. 594).

3.8.2.2 Fixed Effects Model

The fixed effects model in contrast to the pooled model allows for heterogeneity between the corporations studied by allowing each corporation to have its own intercept value (Gujarati & Porter 2009). However, it does not vary over time which is termed 'time-invariant' (Gujarati & Porter 2009, p. 596). The advantage of using the fixed effects model in circumstances where the omitted variables do not change with time (e.g. race or gender), is that it tends to avoid bias (Studenmund 2011, p. 528).

Kennedy (2008) and Studenmund (2011) suggest that the fixed effects model has two main disadvantages. The first is that the degrees of freedom are low because it loses one degree of freedom because of time-demeaning (Kennedy 2008, p. 283; Studenmund 2011, p. 529). The second disadvantage is its inability to estimate the coefficients of the substantive explanatory variables because they are time-invariant (Kennedy 2008, p. 284; Studenmund 2011, p. 529).

3.8.2.3 Random Effects Model

In contrast to the pooled and fixed effects models, the random effects model assumes that the 'intercept for each cross-sectional unit is drawn from a distribution that is centered around a mean intercept' (Studenmund 2011, p. 535). Therefore, each 'intercept is
independent of the error term for any particular observation' (Studenmund 2011, p. 535). The random effects model equation can be expressed as:

$$ Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + ....+\beta_k X_{kit} + U_{it} $$

Where; $Y$ is the dependent variable, $i$ is the subject, $t$ is the time period for the variables, $\beta$ is the estimated coefficient, $X$ are the independent variables and $U$ is the error term.

The random effects model ‘produces a more efficient estimator of the slope coefficients’ and it does not eliminate the time-invariant explanatory variables (Kennedy 2008, p. 284). It is suggested that the fixed effects model is superior when its composite error is uncorrelated with the explanatory variables (Kennedy 2008).

### 3.8.2.4 Hausman Test

In order to select which of either the fixed effects model or the random effects model should be adopted, a method to test the assumption that $C_i$ and $X_{it}$ are correlated should be adopted (Woodridge 2002, p. 288). Hausman (1978) provided a test to establish if the estimators differ for the random effects model and fixed effects model. The null hypotheses under the Hausman test states that the random effects model and fixed effects model estimators do not differ substantially (Gujarati & Porter 2009, p. 604). If the null hypothesis is not rejected, then it is concluded that the random effects model should be used (Gujarati & Porter 2009).

### 3.8.3 Justification for using Panel Data Estimation

Panel data estimation regression analysis is a suitable statistical technique for this study as it measures the combination of both time-series data and cross-sectional data to explain the movements in one dependent variables and a set of other independent variables (Baltagi 2008). In this study, the cross-sectional data is represented by the 54 corporations operating in the material sector, the time-series data is represented by the financial years ending 30 June 2006, 30 June 2007 and 30 June 2008. The dependent variables for the corporate performance accounting measures are: reported net profit, return on assets and return on equity. The corporate performance shareholder measures are: +/- Market, price, earnings ratio and price, and cash flow ratio. The independent variables are represented by compliance or non-compliance with ASX Recommendation 4.3, the size of the board, the All Ordinaries Index and CEO remuneration.
Panel data estimation allows for individual heterogeneity of the 54 corporations operating in the material sector, and more degrees of freedom and efficiency (Baltagi 2008, p. 6 & 7). Moreover, it is better suited to studying the dynamics of adjustment or change due to the repeated cross-section of observations (Baltagi 2008, p. 6 & 7). Furthermore, panel data estimation allows for more accurate measurement of variables and can reduce or eliminate bias (Baltagi 2008, p. 8).

The pooled ordinary least squared model is not appropriate for this study as it would assume that the regression coefficients for all corporations studied are the same and that there is no difference between the corporations studied (Gujarati & Porter 2009). Each of the corporations studied is unique, as a consequence the results will be biased and inconsistent.

The fixed effects model, in contrast to the pooled model, allows for heterogeneity between the entities studied (Gujarati & Porter 2009). However, because it is time-invariant the value of substantive explanatory variable coefficients cannot be estimated (Gujarati & Porter 2009). Effectively, the fixed effects model studies the changes within the organisations studied and does not take into account the time-invariant characteristics (Gujarati & Porter 2009). Subsequently, the fixed effects model may not be appropriate for this study.

The random effects model does not eliminate the time-invariant explanatory variables and 'produces a more efficient estimator of the slope coefficients' variables (Kennedy 2008, p. 284). As the 54 corporations included in this study have differences that are likely to influence the dependent variable, the random effects model is suitable for this study.

A Hausman test (1978) was conducted for each dependent variable and the fixed effects model was selected for this study. The results of the Hausman test for each variable are included in the appendix.

### 3.9 Quality Considerations

Validity, reliability and generalisability are important considerations for quantitative research (Sinkovics, Penz & Ghauri 2008, p. 689). They relate to the ability of the research to be repeated and its capacity to answer the research question (Hussey &
This section describes the quality considerations as determined by the validity, reliability and generalisability of the data utilised for this research.

This research adopted the positivist paradigm and justification of the use of the positivism paradigm is described in Section 3.3.5. Table 3.11 presents the questions of validity, reliability and generalisability from a positivist viewpoint.

Table 3.11 – Questions of Reliability, Validity and Generalisability from a Positivist Viewpoint

<table>
<thead>
<tr>
<th>Validity</th>
<th>‘Does an instrument measure what it is supposed to measure?’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>‘Will the measure yield the same results on different occasions (assuming no real change in what is being measured)?’</td>
</tr>
<tr>
<td>Generalisability</td>
<td>‘What is the probability that patterns observed in a sample will also be present in the wider population from which the sample is drawn?’</td>
</tr>
</tbody>
</table>

Source: Adapted from Easterby, Thorpe and Lowe 1991, p. 41

3.9.1 Validity of the Data

Validity is referred to as the extent to which the data collected accurately measures and represents what it is supposed to measure (Collis & Hussey 2003, p. 58; Ghauri & Gronhaug 2002, p. 68; Sarantakos 2005, p. 83; Ticehurst & Veal 2000, p. 23; Zikmund 2000, p. 281). The validity of the data refers to how well it represents what is being studied and the overall validity of the research refers to how the various parts of the research fit together (Punch 2005, p. 29). Yin (1994, p. 33) identified four tests ‘commonly used to establish the quality of any empirical social research’ as summarised in Table 3.12 below:-
### Table 3.12 – Four Tests for Quality Research

<table>
<thead>
<tr>
<th>Construct Validity</th>
<th>'establishing correct operational measures for the concepts being studied'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Validity</td>
<td>'establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships'</td>
</tr>
<tr>
<td>External Validity</td>
<td>'establishing the domain to which a study’s findings can be generalised'</td>
</tr>
<tr>
<td>Reliability</td>
<td>'demonstrating that the operations of a study – such as the data collection procedures can be repeated, with the same results'</td>
</tr>
</tbody>
</table>

Source: Adapted from Yin 1994, p. 33

In positivist research, if the ability to repeat the research reliably is low, this creates the danger of low validity (Collis & Hussey 2003, p. 59). Construct validity becomes necessary to ensure meaningful and interpretable research findings (Ghauri & Gronhaug 2002, p. 70). Construct validity can be assessed through face validity by ensuring the measurement actually measures what it purports to measure and convergent validity can be assessed by using multiple measures to yield comparable results (Collis & Hussey 2003, p. 59; Ghauri & Gronhaug 2002, p. 70; Sarantakos 2005, p. 85). In quantitative research, construct validity is usually assessed during data analysis when the test can be applied (Zikmund 2000, p. 283). This research utilises multiple sources of data and the approaches and techniques used to analyse the data are widely used and proven analytical techniques used in quantitative research. Furthermore, construct validity was increased by a review conducted by the researcher’s supervisors.

Internal validity is concerned with ‘establishing causal relationships, whereby certain conditions are shown to lead to other conditions’ in procedures such as experiments (Yin 1994, p. 33). The internal validity criterion is not appropriate for this research as this research does not seek to establish any causative impact.

External validity refers to the extent to which the research findings are applicable to other situations (Collis & Hussey 2003; Sarantakos 2005; Sekaran 2000; Ticehurst & Veal 2000). External validity is mostly applicable to explanatory studies (Sarantakos 2005, p. 85). This study utilises empirical exploratory research. The generalisability of this research can be achieved by using the same set of performance variables over a different period of time or over a separate industry group to establish external validity.
3.9.2 Reliability of the Data

Reliability refers to the credibility of findings and the capacity to produce consistent results (Collis & Hussey 2003, p. 58; Sarantakos 2005, p. 88). Reliability refers to the consistency of results and a method is reliable if it produces the same result whenever it is repeated (Davis 2005, p. 189; Punch 2005, p. 95; Sarantakos 2005, p. 88). The purpose of testing reliability is to ensure that the instruments used are ‘not sensitive to changes of the researcher, the respondent or research conditions to ensure objectivity, accuracy, precision, consistency and stability’ (Sarantakos 2005, p. 88).

The data utilised for this study is secondary financial data of publicly listed corporations which is in the public domain and is not subject to interpretation by the researcher. The data from the 2009 publication Morningstar Shareholder, The Handbook of Australia’s Top 500 Companies is ‘compiled from published annual reports, financial statements, prospectuses and information memorandum’ with due care (Morningstar Australasia Pty Ltd 2009, p. xv). Section 296 of the Corporations Act 2001 requires entities to comply with Australian Accounting Standards and provide a true and fair view of their financial statements (Ford, Austin & Ramsey 2003, p. 494). Their financial statements must be audited independently (Redmond 2005, p. 696).

3.10 Ethical Considerations

This section discusses the ethical considerations pertaining to this study. The parties involved in business research generally include: the researcher, the sponsor, the client and the respondents which all have rights and obligations (Zikmond 2000). Zikmond (2000) argues that ‘ethical questions are philosophical questions’ and that no general agreement exists about the appropriate answers to ethical questions in business research (Zikmond 2000, p. 71 & 83).

The parties are entitled to privacy and confidentiality, and to being fully informed, their participation must be voluntary, informed consent must be obtained, and be treated honestly and fairly and not be subjected to any harm (Leedy 1997; Ticehurst & Veal 2000; Zikmond 2000). The researcher’s first obligation is to those persons participating in the research process (Kimmel 1996). The importance of ethical research is evident in codes of ethics being established by various organisations to prevent the abuse of research (Davis 2005, p. 470). In addition, the law in Australia protects those involved in research and set limits to ensure ethical conduct in research (Davis 2005, p. 460).
This research does not have a sponsor or client, does not involve interaction with human respondents and the researcher has no financial or vested interest in its outcome. The primary source of data is secondary financial data of public corporations listed on the ASX which is available in the public domain. The secondary financial data was derived predominantly from the annual reports of public corporations operating in the materials sector and from the 2009 publication 'Morningstar Shareholder, The Handbook of Australia’s Top 500 Companies' (Morningstar Australasia Pty Ltd 2009). The data collected included board characteristics, audit committee characteristics and financial data.

This research was presented to the Southern Cross University’s Human Research Ethics Committee (HREC) for approval. This research was given exemption approval on 24 June 2009 as the data used is on public record and not researching with human subjects.

### 3.11 Conclusion

This chapter commenced by restating the research objectives, research problem, research question and research hypotheses.

In view of the research problem, research objectives, research question and research hypotheses, a positivist approach was selected for this study. The research enables the data to be measured using a quantitative methodology. This study utilises secondary numerical and historical data to answer the research question and test the research hypotheses utilising a quantitative approach which is representative of the positivist paradigm. This study utilises empirical exploratory research to investigate if any relationship exists in corporations with or without audit committees and corporate performance.

The elements of research design were outlined, and the data collection methods and how the data analysis was conducted were explained. Quality and ethical considerations were discussed. The limitations of the study are presented in Section 5.6 of the Conclusions and Implications chapter.
4.1 Introduction

This chapter comprises 5 sections, as depicted in Figure 4.1.

![Chapter 4 Outline Diagram]

Source: Developed for this research

This chapter presents the results and analysis of the data collected in relation to the research question and hypotheses (Perry 2002, p. 33). The results and implications are presented in Chapter 5 together with a comparison of the results with the literature reviewed in Chapter 2 (Perry 2002, p. 34). The research question and hypotheses are restated:
RQ. Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, do those that comply with ASX Recommendation 4.3, achieve higher corporate performance?

In parallel with the research question set out above, the null hypothesis (\(H_0\)) and alternative hypothesis (\(H_1\)) are:

\[H_0.\] Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, there is no significant difference in corporate performance between those corporations that do not comply with ASX Recommendation 4.3 and corporations that do comply.

\[H_1.\] Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, there is a significant difference in corporate performance between those corporations that do not comply with ASX Recommendation 4.3 and corporations that do comply.

Section 4.2 provides a background of the study period and data collection, a description of the entities included in this study and the variables used in the analysis. Section 4.3 presents the results and analysis of the corporate performance accounting measure dependent variables and Section 4.4 presents the results and analysis for corporate performance shareholder measure dependent variables. Section 4.5 concludes this chapter by presenting the emerging themes and inferences that are drawn from the results and analysis.

4.2 Data and Analysis Description

This section provides an overview of the study period and data collection: a description of the entities studied, a summary of the variables that form part of this study and the analysis methods used.

4.2.1 Study Period and Data Collection

This study utilises secondary numerical and historical data to answer the research question and test the research hypotheses using a quantitative approach which is representative of the positivist paradigm. The data was derived predominantly from the
annual reports of corporations for the years ended 30 June 2006, 30 June 2007 and 30 June 2008 and from the 2009 publication ‘Morningstar Shareholder, The Handbook of Australia’s Top 500 Companies’ (Morningstar Australasia Pty Ltd 2009). The data collected included board characteristics, audit committee characteristics and financial data for the 97 corporations ranked in the top 500 companies (by market capitalisation) listed on the ASX operating in the materials sector.

The 97 companies listed on the ASX operating in the materials sector were identified by the GICS Code. The annual reports of the 97 identified corporations for the years ending 30 June 2006, 30 June 2007 and 30 June 2008 were all analysed. A total of 291 annual reports were analysed to extract and compile the data. A total of 43 companies were excluded from this study. Table 3.9 in Section 3.7.1 provided reasons for their exclusion.

The data for the remaining 54 corporations involved in this study were analysed and transcribed onto a data collection template for each corporation. The board and audit committee variables were coded to identify compliance with ASX Recommendation 4.3. When all the obtained data was transcribed onto a corresponding data collection template, the data was then formatted into an Excel Spreadsheet in preparation for analysis.

### 4.2.2 Entities Studied

In order to provide consistency, validity and reliability, only corporations operating in the same Global Industry Classification Standard (GICS) sector were included in this study as discussed in Section 3.6.2. The ASX categorises each corporation into a GICS sectors. Table 3.4 in Section 3.6.2 illustrated the GICS sector breakdown of the top 500 hundred corporations listed of the ASX relevant to the corporations considered in this study.

Consideration was given to a number of sectors prior to selecting corporations operating in the materials sector. The materials sector comprised 97 corporations representing 19.4% of the top 500 companies listed on the ASX. The 54 corporations involved in this study provided representation (as illustrated in Table 3.6 Section 3.6.2) in each of the top 100, 200, 300 and 500 rankings by market capitalisation listed on the ASX.
The organisational profiles for each of the 54 companies in this study are presented in Table 4.1. The table lists each entity with its corresponding ASX Code, the date that the corporation was listed on the ASX, its ASX ranking in the top 100, 200, 300 and 500 by market capitalisation, its compliance with ASX Recommendation 4.3 and a brief description of their core operations.

### Table 4.1 – Organisational Profiles

<table>
<thead>
<tr>
<th>ASX Code</th>
<th>ASX List Date</th>
<th>ASX Top</th>
<th>Comply</th>
<th>Description of Core Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGO</td>
<td>17/12/2004</td>
<td>300</td>
<td>Yes</td>
<td>Mining iron ore.</td>
</tr>
<tr>
<td>AGS</td>
<td>19/10/1994</td>
<td>300</td>
<td>No</td>
<td>Exploration of uranium, gold, copper and base metals.</td>
</tr>
<tr>
<td>ALD</td>
<td>08/12/2003</td>
<td>500</td>
<td>No</td>
<td>Gold exploration and development.</td>
</tr>
<tr>
<td>AMC</td>
<td>28/08/1969</td>
<td>100</td>
<td>Yes</td>
<td>Global packaging company.</td>
</tr>
<tr>
<td>AND</td>
<td>18/12/1995</td>
<td>500</td>
<td>No</td>
<td>Gold and silver exploration.</td>
</tr>
<tr>
<td>AQP</td>
<td>29/09/1999</td>
<td>500</td>
<td>Yes</td>
<td>Platinum metal mining and production.</td>
</tr>
<tr>
<td>ASL</td>
<td>06/01/1994</td>
<td>300</td>
<td>Yes</td>
<td>Diversified mining services. Services include, drill and blast, grade control, water well drilling, equipment sales and hire, parts, load and haul services, underground mining services and crusher feed services.</td>
</tr>
<tr>
<td>AVO</td>
<td>15/04/2002</td>
<td>300</td>
<td>No</td>
<td>Mineral exploration and development.</td>
</tr>
<tr>
<td>AXM</td>
<td>07/06/2002</td>
<td>300</td>
<td>No</td>
<td>Gold Mining.</td>
</tr>
<tr>
<td>BHP</td>
<td>13/08/1885</td>
<td>100</td>
<td>Yes</td>
<td>Mineral and petroleum exploration and production.</td>
</tr>
<tr>
<td>BLD</td>
<td>21/02/2000</td>
<td>100</td>
<td>Yes</td>
<td>Building and construction company supplying cement, construction materials, plasterboard, bricks and roof tiles.</td>
</tr>
<tr>
<td>BSL</td>
<td>15/07/2002</td>
<td>100</td>
<td>Yes</td>
<td>Flat steel producer and supplier of steel products and solutions.</td>
</tr>
<tr>
<td>CDU</td>
<td>08/04/1983</td>
<td>300</td>
<td>No</td>
<td>Mining and mineral exploration.</td>
</tr>
<tr>
<td>CFE</td>
<td>07/06/2001</td>
<td>300</td>
<td>No</td>
<td>Mineral exploration and development of iron ore, copper, gold, uranium, phosphate, lead silver zinc and vanadium.</td>
</tr>
<tr>
<td>ASX Code</td>
<td>ASX List Date</td>
<td>ASX Top</td>
<td>Comply</td>
<td>Description of Core Operations</td>
</tr>
<tr>
<td>----------</td>
<td>---------------</td>
<td>---------</td>
<td>--------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>CNX</td>
<td>22/12/1993</td>
<td>300</td>
<td>Yes</td>
<td>Energy company producing clean energy by using underground coal gasification technology.</td>
</tr>
<tr>
<td>CRK</td>
<td>20/01/2005</td>
<td>500</td>
<td>No</td>
<td>Gold exploration and development.</td>
</tr>
<tr>
<td>CTO</td>
<td>23/12/1993</td>
<td>300</td>
<td>No</td>
<td>Gold mining and exploration.</td>
</tr>
<tr>
<td>CUO</td>
<td>20/08/1970</td>
<td>300</td>
<td>No</td>
<td>Copper mining and exploration.</td>
</tr>
<tr>
<td>DOM</td>
<td>30/06/1981</td>
<td>300</td>
<td>No</td>
<td>Gold producer and explorer of base metals and other commodities.</td>
</tr>
<tr>
<td>FBU</td>
<td>26/03/2001</td>
<td>500</td>
<td>Yes</td>
<td>Building products and construction materials.</td>
</tr>
<tr>
<td>FEA</td>
<td>06/06/2000</td>
<td>500</td>
<td>Yes</td>
<td>Integrated forestry and forest products.</td>
</tr>
<tr>
<td>FMG</td>
<td>19/03/1987</td>
<td>100</td>
<td>Yes</td>
<td>Iron Ore production and exploration.</td>
</tr>
<tr>
<td>GBG</td>
<td>12/04/1994</td>
<td>300</td>
<td>Yes</td>
<td>Iron Ore production and exploration.</td>
</tr>
<tr>
<td>GIR</td>
<td>30/07/1987</td>
<td>300</td>
<td>No</td>
<td>Mineral exploration.</td>
</tr>
<tr>
<td>GNS</td>
<td>29/02/1976</td>
<td>200</td>
<td>Yes</td>
<td>Hardwood forest products.</td>
</tr>
<tr>
<td>IMD</td>
<td>24/09/1987</td>
<td>300</td>
<td>Yes</td>
<td>Provider of drilling fluid products, advance down hole instrumentation, data solutions, geo-analytics services to exploration, development and production companies operating in the minerals, oil and gas sectors.</td>
</tr>
<tr>
<td>KCN</td>
<td>21/04/1988</td>
<td>500</td>
<td>Yes</td>
<td>Gold mining, exploration and production.</td>
</tr>
<tr>
<td>KZL</td>
<td>22/12/1999</td>
<td>300</td>
<td>Yes</td>
<td>Mining zinc, lead, copper, silver and gold.</td>
</tr>
<tr>
<td>MCC</td>
<td>05/07/2001</td>
<td>200</td>
<td>Yes</td>
<td>Coal mining, processing, exploration and development.</td>
</tr>
<tr>
<td>MCR</td>
<td>08/07/1997</td>
<td>300</td>
<td>Yes</td>
<td>Mining nickel and base metals.</td>
</tr>
<tr>
<td>MDL</td>
<td>17/04/1997</td>
<td>300</td>
<td>No</td>
<td>Locating, mining and processing mineral sands resources.</td>
</tr>
<tr>
<td>MGX</td>
<td>12/02/1976</td>
<td>200</td>
<td>Yes</td>
<td>Exploration, development and mining or iron ore.</td>
</tr>
<tr>
<td>MLX</td>
<td>26/08/2004</td>
<td>500</td>
<td>No</td>
<td>Exploration and production of diversified resources.</td>
</tr>
<tr>
<td>MML</td>
<td>23/12/2003</td>
<td>500</td>
<td>No</td>
<td>Gold producer.</td>
</tr>
<tr>
<td>MMX</td>
<td>01/04/2005</td>
<td>300</td>
<td>No</td>
<td>Mineral exploration.</td>
</tr>
<tr>
<td>NCM</td>
<td>04/06/1987</td>
<td>100</td>
<td>Yes</td>
<td>Gold producer.</td>
</tr>
</tbody>
</table>
| NPX      | 25/11/1999    | 500     | No     | Manufacturer of resin used in paints, coatings and
<table>
<thead>
<tr>
<th>ASX Code</th>
<th>ASX List Date</th>
<th>ASX Top</th>
<th>Comply</th>
<th>Description of Core Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>OST</td>
<td>23/10/2000</td>
<td>100</td>
<td>Yes</td>
<td>Iron ore mining and materials.</td>
</tr>
<tr>
<td>PAN</td>
<td>12/09/2001</td>
<td>300</td>
<td>Yes</td>
<td>Mining and production of nickel sulphide.</td>
</tr>
<tr>
<td>PLA</td>
<td>09/10/2000</td>
<td>300</td>
<td>Yes</td>
<td>Mineral exploration and development of platinum.</td>
</tr>
<tr>
<td>PPX</td>
<td>17/04/2000</td>
<td>200</td>
<td>Yes</td>
<td>Merchant company supplying fine paper, sign and display material, graphics and industrial packaging materials.</td>
</tr>
<tr>
<td>RMS</td>
<td>31/03/2003</td>
<td>500</td>
<td>No</td>
<td>Gold mining and production.</td>
</tr>
<tr>
<td>RSG</td>
<td>11/01/1979</td>
<td>300</td>
<td>Yes</td>
<td>Gold mining and exploration.</td>
</tr>
<tr>
<td>SGM</td>
<td>14/11/1991</td>
<td>100</td>
<td>Yes</td>
<td>Metals and electronic recycling.</td>
</tr>
<tr>
<td>SLV</td>
<td>14/02/2001</td>
<td>300</td>
<td>No</td>
<td>Platinum metals producer with tailing retreatment operations and shallow mining exploration.</td>
</tr>
<tr>
<td>SMM</td>
<td>07/04/1994</td>
<td>500</td>
<td>No</td>
<td>Uranium exploration.</td>
</tr>
<tr>
<td>SPH</td>
<td>03/12/1986</td>
<td>500</td>
<td>No</td>
<td>Iron ore mining.</td>
</tr>
<tr>
<td>TFC</td>
<td>21/12/2004</td>
<td>500</td>
<td>Yes</td>
<td>Plantation, cultivation and sale of agricultural produce. Finance, production and sale of sandalwood oil and related products.</td>
</tr>
<tr>
<td>WEC</td>
<td>23/07/1999</td>
<td>500</td>
<td>No</td>
<td>Technology enables natural resource company focusing on clean coal technology and coal mining.</td>
</tr>
<tr>
<td>WSA</td>
<td>28/07/2000</td>
<td>500</td>
<td>Yes</td>
<td>Nickel sulphide explorer and producer.</td>
</tr>
<tr>
<td>WYL</td>
<td>30/06/1962</td>
<td>300</td>
<td>Yes</td>
<td>Manufacturing, sales and distribution of paint and surface coatings for the domestic, commercial and industrial markets.</td>
</tr>
</tbody>
</table>

Source: Adapted for this research from Morningstar Australasia Pty Ltd 2009

4.2.3 Variables Studied

The primary focus variable used in this study is whether a corporation complied with ASX Recommendation 4.3. It was necessary to establish the number of directors on the board of the corporation in order to determine if the corporation had at least three directors and further establish whether or not they complied with ASX Recommendation 4.3. The data
for the total number of directors (executive and non-executive) listed on the board were extracted from the annual reports for each corporation studied for the each year studied.

The study included 30 corporations that complied with Recommendation 4.3 and 24 that did not comply. The corporations that complied with Recommendation 4.3 were assigned a binary number of 1 and the corporations that did not comply were assigned a binary number of 0. The remaining independent variables were explanatory variables used to correct any bias.

Gross Domestic Product (GDP) independent variable represents the monetary value at a specific time period for all goods and services produced by a nation (Samuelson et al. 1992). GDP is an indicator of a nation's economic performance and underlying economic growth (Samuelson et al. 1992). The data representing the Australian GDP for the years ending June 2006, June 2007 and June 2008 were obtained from the World Bank website. The reported Australian GDP is presented as a US dollar amount rounded to the nearest million dollars for each June quarter for the years 2006, 2007 and 2008.

The All Ordinaries Index (ALLORDS) independent variable is a market indicator of performance (driven by expectations of future economic growth) representing the performance of the top 500 companies listed on the ASX (Parliament of Australia 2015). The ASX All Ordinaries Index is the reported market capitalisation figure for the top 500 companies listed on the ASX for each of 30 June 2006, 30 June 2007 and 30 June 2008.

The total remuneration is the total dollar value paid to each CEO. It includes salary, bonuses, super, leave entitlements, options, and any other financial entitlements reported in the annual reports for each corporation included in the study for the years ended 30 June 2006, 30 June 2007 and 30 June 2008. The total value of remuneration paid to the CEO of a corporation is representative of the management skill level of the CEO and its effect on corporate performance.

The dependent variables for the corporate performance accounting measures are: reported net profit, return on assets and return on equity. The corporate performance shareholder measures are: +/- Market, price earnings ratio and price cash flow ratio. Table 4.2 lists the variables which were detailed in Sections 3.6.4 and 3.6.5.
Table 4.2 – Variables Studied

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Corporate Performance Dependent Variables (Accounting Measures)</th>
<th>Corporate Performance Dependent Variables (Shareholder Measures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance with ASX Rec. 4.3 (COMPLY)</td>
<td>Reported Net Profit $mil – (RNP)</td>
<td>+/- Market % – (M)</td>
</tr>
<tr>
<td>The size of the board (TOTALDIR)</td>
<td>Return on Assets % – (ROA)</td>
<td>Price / Earnings Ratio – (PER)</td>
</tr>
<tr>
<td>Gross Domestic Product (GDP)</td>
<td>Return on Equity % – (ROE)</td>
<td>Price / Cash Flow Ratio – (PCFR)</td>
</tr>
<tr>
<td>All Ordinaries Index (ALLORDS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEO Remuneration (CEOPAY)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2.4 Data Analysis

The objective of this study is to determine whether compliance or non-compliance with ASX Recommendation 4.3 as part of Australia’s corporate governance reforms is related to the performance of corporations as measured by accounting methods and shareholder value methods. In order to investigate this matter, companies operating in the materials sector that are ranked in the top 500 companies listed on the ASX were analysed. The collected data was coded and transcribed into an Excel spreadsheet for use with EViews Student Version 8 in order to conduct a panel data estimation regression using the random effects model.

Summary statistics for both the dependent and independent variables are presented in the appendix. The results of a Jarque-Bera test and the probability values for each of the variables showed that they are not normally distributed. Central limit theorem allows for normal distribution where the observations are greater than 30 (Black et al. 2000, p. 251). The central limit theorem applies the normal distribution to both the dependent and independent variables as the number of observations (162) for each model is greater than 30.

A correlation matrix for the dependent variables was conducted which is presented in the appendix. The results of the matrix show that variables ROA and ROE are positively correlated at 0.858887, which is reasonably expected. However, each of the variables were analysed in separate models which eliminates any collinearity issue. The ROA
variable has a broader stakeholder theory perspective, whereas the ROE variable is agency theory driven for the purpose of equity holders.

Poolability and heteroscedasticity were considered and it was assumed that the slope coefficients are the same among the selected 54 firms over the 3 periods investigated. It was anticipated that these firms are likely to respond similarly to changes in the independent variables. This is because: i) all 54 firms operated within the materials sector; ii) they were all ranked in the top 500 companies by market capitalisation listed on the ASX; iii) they are all exposed to a single currency financial market; iv) they are all subject to the same rules and regulations; and v) they are all subject to the same corporate governance and oversight requirements. Based on the above, the panel data meets the test for poolability and heteroscedasticity.

Panel data estimation regression analysis was selected as a suitable statistical technique for this study as it measures a combination of time-series data and cross-sectional data to explain the movements in each of the dependent variables and a set of other independent variables (Gujarati & Porter 2009; Studenmund 2011). The cross-sectional data is for the 54 corporations operating in the materials sector, the time-series data is for the financial years which ended on 30 June 2006, 30 June 2007 and 30 June 2008.

Panel data estimation allows for individual heterogeneity of the 54 corporations operating in the materials sector, as well as more degrees of freedom and efficiency (Baltagi 2008, p. 6 & 7). It is also well suited to studying the dynamics of adjustment or change due to the repeated use of cross-sectional observations (Baltagi 2008, p. 6 & 7). Furthermore, panel data estimation allows for more accurate measurement of variables than is possible with other models and can reduce or eliminate bias (Baltagi 2008, p. 8).

There are several alternative panel data estimation models that can be used. The pooled model, fixed effects model and random effects model were considered for this study. The pooled ordinary least squared model was not considered appropriate for this study as there would have been an assumption that the regression coefficients for all corporations studied were the same and that there were no differences between the corporations studied (Gujarati & Porter 2009). The corporations studied are all unique, and as a consequence the results would have been biased and inconsistent.

The fixed effects model, in contrast to the pooled model, allows for heterogeneity between the entities studied (Gujarati & Porter 2009). However, because it is time-invariant it would
not have been possible to estimate the value of substantive explanatory variable coefficients (Gujarati & Porter 2009). Effectively, the fixed effects model studies the changes within the organisations studied and does not take into account time-invariant characteristics (Gujarati & Porter 2009).

The random effects model does not eliminate the time-invariant explanatory variables and 'produces a more efficient estimator of the slope coefficients' variables' (Kennedy 2008, p. 284). In order to select which of either the fixed effects model or the random effects model should be adopted, a method to test the assumption that $C_i$ and $X_{it}$ are correlated was adopted (Woodridge 2002, p. 288). A Hausman (1978) test was conducted for each dependent variable and the fixed effects model was selected for this study. The results of the Hausman test for each dependent variable are included in the appendix. The results of the tests found no evidence of endogeneity. As no evidence of endogeneity exists, no further testing for dynamic endogeneity is applicable. As the 54 corporations included in this study had differences that were likely to influence each dependent variable, the random effects model was suitable for this study.

A random effects model regression analysis was conducted for the dependent variables RNP, ROA, ROE, M, PER and PCFR that included 54 cross sections for three periods for the financial years ending 30 June 2006, 2007 and 2008 representing a total of 162 balanced panel observations. The general regression equation for each dependent variable is expressed as:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 D_{1it} + \beta_5 D_{2it} + U_{it}$$

Where; $Y$ is the dependent variable, $i$ is the subject CODE, $t$ is the YEAR, $\beta$ is the estimated coefficient, $X_1$ is the GDP, $X_2$ is the ALLORDS, $X_3$ is the CEOPAY, $D_1$ is COMPLY, $D_2$ is the TOTALDIR and $U$ represents the error term.

### 4.3 Accounting Measure Variable Analysis

This section presents the results of the panel data random effects model regression analysis conducted for each of the corporate performance accounting measure dependent variables: RNP, ROA and ROE.
4.3.1 Panel Data Random Effects Model Analysis for Dependent Variable RNP

The dependent variable reported net profit is the corporation’s income less expenses (Birt et al. 2008, p. 209). Operating revenue in the context of this research ‘represents net operating profit after tax, minorities, preference dividends, significant and non-recurring items’ (Morningstar Australasia Pty Ltd 2009, p. xi). The reported net profit is expressed to the nearest million dollars. A random effects model regression analysis was conducted for dependent variable RNP using the following equation:-

\[ RNP_{it} = \alpha + \beta_1 \text{GDP}_{it} + \beta_2 \text{ALLORDS}_{it} + \beta_3 \text{CEOPAY}_{it} + \beta_4 \text{COMPLY}_{it} + \beta_5 \text{TOTALDIR}_{it} + U_{it} \]

The RNP is a measure of a corporation’s capacity to generate a profit from its operations. The coefficients of explanatory variables compliance with Recommendation 4.3 (COMPLY) and the size of the board (TOTALDIR) is expected to be positive on the assumption that the corporations that comply are likely to be larger corporations listed in the top 300 companies with larger boards that are required to comply with Recommendation 4.3 pursuant to ASX Listing Rule 12.7.

The third explanatory variable, Gross Domestic Product (GDP) is a measure of Australia's economic performance and underlying economic growth (Samuelson et al. 1992). The data representing the Australian GDP for the years ending June 2006, June 2007 and June 2008 showed an increase in each year. Hence, a positive coefficient is expected for GDP.

The fourth explanatory variable is the All Ordinaries Index (ALLORDS) which is a market indicator of performance (driven by expectations of future economic growth) representing the performance of the top 500 companies listed on the ASX (Parliament of Australia 2015). The ALLORDS Index reflected an increase in securities prices between June 2006 and June 2007 and a smaller reduction in securities prices between June 2007 and June 2008. Given that there is a positive fluctuation in the index during the period, a positive coefficient for ALLORDS is expected.

The fifth explanatory variable is CEO remuneration for each corporation included in this study for the years ending 30 June 2006, 30 June 2007 and 30 June 2008. The total value of remuneration paid to the CEO of a corporation is representative of the management skill level of the CEO and its effect on corporate performance. Therefore, a positive
The results of the random effects model regression analysis for the dependent variable RNP are presented in Table 4.3 below.

Table 4.3 – Random Effects Model Regression Analysis Results for RNP

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-146.4454</td>
<td>374.1340</td>
<td>-0.391425</td>
<td>0.6960</td>
</tr>
<tr>
<td>COMPLY</td>
<td>680.1176</td>
<td>460.5474</td>
<td>1.476759</td>
<td>0.1418</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>-36.93685</td>
<td>23.48083</td>
<td>-1.573064</td>
<td>0.1177</td>
</tr>
<tr>
<td>GDP</td>
<td>0.188315</td>
<td>0.104893</td>
<td>1.795311</td>
<td>0.0745</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>0.022320</td>
<td>0.022072</td>
<td>1.011205</td>
<td>0.3135</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>1.40E-05</td>
<td>1.26E-05</td>
<td>1.118423</td>
<td>0.2651</td>
</tr>
</tbody>
</table>

Weighted Statistics

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.043244</td>
<td>Mean dependent variance</td>
<td>17.58343</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.012579</td>
<td>S.D. dependent variance</td>
<td>165.2829</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>164.2401</td>
<td>Sum squared residual</td>
<td>4208068.</td>
</tr>
<tr>
<td>F-statistic</td>
<td>1.410189</td>
<td>Durbin-Watson statistic</td>
<td>1.196700</td>
</tr>
<tr>
<td>Prob. (F-statistic)</td>
<td>0.223477</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis produced a positive coefficient for COMPLY as expected and a negative coefficient for explanatory variable TOTALDIR which was not expected. The analysis also produced positive coefficients for GDP, CEOPAY and ALLORDS as expected. The probability results for each of the explanatory variables are not significant \((P >0.05)\) at greater than 5% for COMPLY at 14.18%, TOTALDIR at 11.77%, GDP at 7.45%, ALLORDS at 31.35% and CEOPAY at 26.51%.

The \( R^2 \)-Squared coefficient of determination (0.043244) is less than 5%, indicating that only 4.32% of the variance can be explained. The probability \( F \)-Statistic is greater than 0.05. Considering that the results produced a low percentage of overall fit and statistically insignificant probability values, a statistical inference will not be drawn for RNP. Subsequently, there will not be any conclusions or implications presented in Chapter 5 relating to this variable.
4.3.2 Panel Data Random Effects Model Analysis for Dependent Variable ROA

The return on assets ratio is a profitability measure of a corporation’s ‘ability to convert sales revenue into profit, and its ability to generate income from its asset investments’ (Birt et al. 2008, p. 289). The return on assets ratio is expressed as a percentage calculated as earnings before net interest (interest revenue less interest expense) and tax divided by average total assets multiplied by 100 (Morningstar Australasia Pty Ltd 2009, p. xiii). A higher return on assets ratio reflects more effective trading through profitability and asset efficiency (Birt et al. 2008, p. 290; Cooper et al. 1997, p. 230).

A random effects model regression analysis was conducted for dependent variable ROA using the following equation:

\[
ROA_{it} = \alpha + \beta_1 GDP_{it} + \beta_2 ALLORDS_{it} + \beta_3 CEOPAY_{it} + \beta_4 COMPLY_{it} + \beta_5 TOTALDIR_{it} + U_{it}
\]

The results are expected to show positive coefficients for the explanatory variables COMPLY and TOTALDIR on the assumption that the corporations that comply are likely to be larger corporations listed in the top 300 companies with larger boards that are required to comply with Recommendation 4.3 pursuant to ASX Listing Rule 12.7. Similarly, given that the data representing the Australian GDP for the years ending June 2006, June 2007 and June 2008 showed an increase in each year, a positive coefficient is expected for GDP.

The All Ordinaries Index (ALLORDS) reflected an increase in securities prices between June 2006 and June 2007 and a smaller reduction in securities prices between the period June 2007 and June 2008. Given the fluctuation in the index during the period, a positive coefficient for ALLORDS is expected. A positive coefficient is expected for CEOPAY. It is assumed that larger corporations are likely offer larger remuneration packages to attract highly skilled managers and this will have a positive impact on their corporate performance.

The results of the random effects model regression analysis for the dependent variable ROA are presented in Table 4.4 below.
Table 4.4 – Random Effects Model Regression Analysis Results for ROA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-21.22673</td>
<td>12.85533</td>
<td>-1.651200</td>
<td>0.1007</td>
</tr>
<tr>
<td>COMPLY</td>
<td>12.45017</td>
<td>4.753081</td>
<td>2.619389</td>
<td>0.0097</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>3.396400</td>
<td>1.181923</td>
<td>2.873622</td>
<td>0.0046</td>
</tr>
<tr>
<td>GDP</td>
<td>0.017128</td>
<td>0.008082</td>
<td>2.119282</td>
<td>0.0356</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.001891</td>
<td>0.001838</td>
<td>-1.028901</td>
<td>0.3051</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>-5.90E-06</td>
<td>9.16E-07</td>
<td>-6.445042</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Weighted Statistics

- $R^2$: 0.269055
- Mean dependent variance: 0.316236
- Adjusted $R^2$: 0.245627
- S.D. dependent variance: 14.90733
- S.E. of regression: 12.94771
- Sum squared residual: 26152.35
- $F$-statistic: 11.48445
- Durbin-Watson statistic: 2.116773

The analysis produced positive coefficients for COMPLY, TOTALDIR and GDP as expected and a negative coefficient for explanatory variable ALLORDS. The explanatory variable CEOPAY produced a negative coefficient. This was unexpected.

The probability results are significant ($P <0.05$) at less than 5% for explanatory variables COMPLY (0.0097) at 0.97%, TOTALDIR (0.0046) at 0.46%, GDP (0.0356) at 3.56% and CEOPAY (0.0000) at 0.00%. The probability result for the explanatory variable ALLORDS (0.3051) at 30.51% is not significant ($P >0.05$) at greater than 5%.

The COMPLY coefficient of 12.45017 suggests that the corporations that complied with ASX Recommendation 4.3 had return on asset ratios that were 12.45% higher than those organisations that did not comply. The $R^2$-Squared coefficient of determination (0.269055) indicates that 26.9% of the variance can be explained and the probability $F$-Statistic is significant at less than 0.05. Given the percentage of overall fit and statistically significant probability values, a statistical inference may be drawn for ROA.
4.3.3 Panel Data Random Effects Model Analysis for Dependent Variable ROE

The return on equity ratio is a profitability measure is a measure of the profit made by the corporation on its total equity (Birt et al. 2008, p. 289). The return on equity ratio is expressed as a percentage and is calculated by net operating profit after tax and after minorities and preference dividends divided by shareholder equity multiplied by 100 (Morningstar Australasia Pty Ltd 2009, p. xiii & xviii). The return on equity ratio is a measure of the return on the owners' investment which reflects the direction of the corporation's profitability, asset efficiency and capital structure (Bazley, Hancock & Porter 2010, p. 428; Birt et al. 2008, p. 289; Cooper et al. 1997, p. 231).

A random effects model regression analysis was conducted for the dependent variable ROE using the following equation:

\[
\text{ROE}_{it} = \alpha + \beta_1 \text{GDP}_{it} + \beta_2 \text{ALLORDS}_{it} + \beta_3 \text{CEOPAY}_{it} + \beta_4 \text{COMPLY}_{it} + \beta_5 \text{TOTALDIR}_{it} + U_{it}
\]

The results are expected to show positive coefficients for explanatory variables COMPLY and TOTALDIR on the assumption that the corporations that comply are likely to be larger corporations listed in the top 300 companies with larger boards that are required to comply with Recommendation 4.3 pursuant to ASX Listing Rule 12.7. Similarly, given that the data representing the Australian GDP for the years ending June 2006, June 2007 and June 2008 showed an increase for each year, a positive coefficient is expected for GDP.

The All Ordinaries Index (ALLORDS) reflected an increase in securities prices between June 2006 and June 2007 and a smaller reduction in securities prices between June 2007 and June 2008. Given the fluctuation in the index during the period, a positive coefficient for ALLORDS is expected. A positive coefficient is expected for CEOPAY. It is assumed that larger corporations are likely offer larger remuneration packages to attract highly skilled managers and this will have a positive impact on their corporate performance.

The results of the random effects model regression analysis for dependent variable ROE are presented in Table 4.5 below.
Table 4.5 – Random Effects Model Regression Analysis Results for ROE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-5.911492</td>
<td>24.73737</td>
<td>-0.238970</td>
<td>0.8114</td>
</tr>
<tr>
<td>COMPLY</td>
<td>21.88637</td>
<td>7.097331</td>
<td>3.083746</td>
<td>0.0024</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>4.391145</td>
<td>1.939140</td>
<td>2.264481</td>
<td>0.0249</td>
</tr>
<tr>
<td>GDP</td>
<td>0.016732</td>
<td>0.015659</td>
<td>1.068530</td>
<td>0.2869</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.005883</td>
<td>0.003605</td>
<td>-1.631942</td>
<td>0.1047</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>-5.84E-06</td>
<td>1.65E-06</td>
<td>-3.529972</td>
<td>0.0005</td>
</tr>
</tbody>
</table>

Weighted Statistics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Mean dependent variance</th>
<th>2.737732</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.184384</td>
<td>S.D. dependent variance</td>
<td>27.28845</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.158242</td>
<td>Sum squared residual</td>
<td>97784.39</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>25.03643</td>
<td>Durbin-Watson statistic</td>
<td>2.145126</td>
</tr>
<tr>
<td>F-statistic</td>
<td>7.053291</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob. (F-statistic)</td>
<td>0.000006</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis produced positive coefficients for COMPLY, TOTALDIR and GDP as expected and a negative coefficient for the explanatory variable ALLORDS. The explanatory variable CEOPAY had a negative coefficient. This was unexpected.

The probability results are significant ($P <0.05$) at less than 5% for explanatory variables COMPLY at 0.24%, TOTALDIR at 2.49%, and CEOPAY at 0.05%. The probability result for explanatory variable GDP at 28.69% and ALLORDS at 10.47% is not significant ($P >0.05$) at greater than 5%.

The COMPLY coefficient of 21.88637 suggests that those corporations that complied with ASX Recommendation 4.3 had return on equity ratios that were 21.89% higher than those organisations that did not comply. The $R$-Squared coefficient of determination (0.184384) indicates that 18.44% of the variance can be explained and the probability $F$-Statistic (0.000006) is significant at less than 0.05. Subsequently, with a reasonable percentage of overall fit and statistically significant probability values for COMPLY, TOTALDIR and CEOPAY, a statistical inference may be drawn for ROE.
4.4 Shareholder Measure Variable Analysis

This section presents the results of the panel data random effects model regression analysis conducted for each of the corporate performance shareholder measure dependent variables: M, PER and PCFR.

4.4.1 Panel Data Random Effects Model Analysis for Dependent Variable M

The plus or minus (+/-) market figure represents the positive or negative percentage ‘performance between the stock and the overall market’ (Morningstar Australasia Pty Ltd 2009, p. xvii). The +/- market figure for a corporation is expressed as a percentage of its comparative performance.

A random effects model regression analysis was conducted for the dependent variable M using the following equation:-

\[ M_{it} = \alpha + \beta_1 GDP_{it} + \beta_2 ALLORDS_{it} + \beta_3 CEOPAY_{it} + \beta_4 COMPLY_{it} + \beta_5 TOTALDIR_{it} + U_{it} \]

The results were expected to show positive coefficients for the explanatory variables COMPLY and TOTALDIR on the assumption that the corporations that complied are likely to be larger corporations listed in the top 300 companies, with larger boards that are required to comply with Recommendation 4.3 pursuant to ASX Listing Rule 12.7. Similarly, given that the data representing the Australian GDP for the years ending June 2006, June 2007 and June 2008 showed an increase in each year, a positive coefficient is expected for GDP.

The All Ordinaries Index (ALLORDS) reflected an increase in securities prices between June 2006 and June 2007 and a smaller reduction in securities prices between June 2007 and June 2008. Given the fluctuation in the index during the period, a positive coefficient for ALLORDS is expected. A positive coefficient is expected for CEOPAY. It is assumed that larger corporations are likely offer larger remuneration packages to attract highly skilled managers and this will have a positive impact on their corporate performance.

The results of the random effects model regression analysis for the dependent variable M are presented in Table 4.6 below.
Table 4.6 – Random Effects Model Regression Analysis Results for M

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>220.9862</td>
<td>157.8650</td>
<td>1.399843</td>
<td>0.1635</td>
</tr>
<tr>
<td>COMPLY</td>
<td>-29.47911</td>
<td>30.57412</td>
<td>-0.964185</td>
<td>0.3364</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>-5.351106</td>
<td>9.313533</td>
<td>-0.574552</td>
<td>0.5664</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.212470</td>
<td>0.100775</td>
<td>-2.108365</td>
<td>0.0366</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>0.019457</td>
<td>0.023445</td>
<td>0.829884</td>
<td>0.4079</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>-8.91E-06</td>
<td>8.87E-06</td>
<td>-1.004459</td>
<td>0.3167</td>
</tr>
</tbody>
</table>

Weighted Statistics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Mean dependent variance</th>
<th>82.69679</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.075389</td>
<td>S.D. dependent variance</td>
<td>166.1617</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.045754</td>
<td>Sum squared residual</td>
<td>411004.</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>162.3159</td>
<td>Durbin-Watson statistic</td>
<td>2.072924</td>
</tr>
<tr>
<td>F-statistic</td>
<td>2.543907</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob. (F-statistic)</td>
<td>0.030367</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis produced negative coefficients for COMPLY, TOTALDIR, GDP and CEOPAY where positive results were expected for each. The analysis produced a positive coefficient for ALLORDS as expected.

The probability results are not significant \( (P > 0.05) \) at greater than 5% for COMPLY at 33.64%, TOTALDIR at 56.64%, ALLORDS at 40.79% and CEOPAY at 31.67%. The probability result for explanatory variable GDP at 3.66% is significant \( (P < 0.05) \) at less than 5%.

The \( R \)-Squared coefficient of determination (0.075389) indicates that only 7.5% of the variance can be explained and the \( F \)-Statistic is less than 0.05. As the results produced a low percentage of overall fit and statistically insignificant probability values (with the exception of the value for GDP), statistical inferences cannot be drawn for M. Therefore, no conclusions or implications will be presented in Chapter 5 relating to this variable.
4.4.2 Panel Data Random Effects Model Analysis for Dependent Variable PER

The price earnings ratio is a market value indicator that represents the number of years of earnings it would take to repay the purchase price at the current market price (Birt et al. 2008, p. 305). Effectively, it provides for the market’s assessment of a corporation’s future performance in comparison to the current market price of that security (Birt et al. 2008, p. 305). It is calculated as the current market price divided by the reported earnings per share before non-recurring items (Morningstar Australasia Pty Ltd 2009, p. xix).

A random effects model regression analysis was conducted for the dependent variable PER using the following equation:-

\[ \text{PER}_{it} = \alpha + \beta_1 \text{GDP}_{it} + \beta_2 \text{ALLORDS}_{it} + \beta_3 \text{CEOPAY}_{it} + \beta_4 \text{COMPLY}_{it} + \beta_5 \text{TOTALDIR}_{it} + U_{it} \]

The results are expected to show positive coefficients for explanatory variables COMPLY and TOTALDIR on the assumption that those corporations are likely to be larger corporations listed in the top 300 companies with larger boards that are required to comply with Recommendation 4.3 pursuant to ASX Listing Rule 12.7. Similarly, given that the data representing the Australian GDP for the years ending June 2006, June 2007 and June 2008 showed an increase in each year, a positive coefficient is expected for GDP.

The All Ordinaries Index (ALLORDS) reflected an increase in securities prices between June 2006 and June 2007 and a smaller reduction in securities prices between June 2007 and June 2008. Given the fluctuation in the index during the period, a positive coefficient for ALLORDS is expected. A positive coefficient is expected for CEOPAY. It is assumed that larger corporations are likely offer larger remuneration packages to attract highly skilled managers and this will have a positive impact on their corporate performance.

The results of the random effects model regression analysis for the dependent variable PER are presented in Table 4.7 below.
Table 4.7 – Random Effects Model Regression Analysis Results for PER

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-72.26749</td>
<td>133.7174</td>
<td>-0.540449</td>
<td>0.5897</td>
</tr>
<tr>
<td>COMPLY</td>
<td>33.98562</td>
<td>32.13115</td>
<td>1.057716</td>
<td>0.2918</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>3.620506</td>
<td>9.267064</td>
<td>0.390685</td>
<td>0.6966</td>
</tr>
<tr>
<td>GDP</td>
<td>0.059041</td>
<td>0.084974</td>
<td>0.694813</td>
<td>0.4882</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.012041</td>
<td>0.019677</td>
<td>-0.611955</td>
<td>0.5415</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>9.11E-06</td>
<td>8.36E-06</td>
<td>1.089068</td>
<td>0.2778</td>
</tr>
</tbody>
</table>

Weighted Statistics

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.044373</td>
</tr>
<tr>
<td>Mean dependent variance</td>
<td>-27.88888</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.013744</td>
</tr>
<tr>
<td>S.D. dependent variance</td>
<td>135.4276</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>134.4937</td>
</tr>
<tr>
<td>Sum squared residual</td>
<td>2821816.</td>
</tr>
<tr>
<td>F-statistic</td>
<td>1.448722</td>
</tr>
<tr>
<td>Durbin-Watson statistic</td>
<td>2.108932</td>
</tr>
<tr>
<td>Prob. (F-statistic)</td>
<td>0.209861</td>
</tr>
</tbody>
</table>

The analysis produced positive coefficients for COMPLY, TOTALDIR, GDP and CEOPAY as expected and a negative coefficient for explanatory variable ALLORDS.

The probability results for each of the explanatory variables are not significant \( P >0.05 \) at greater than 5% for COMPLY at 29.18%, TOTALDIR at 69.66%, GDP at 48.82%, ALLORDS at 54.15% and CEOPAY at 27.78%.

The \( R \)-Squared coefficient of determination (0.044373) is at less than 5%, indicating that only 4.44% of the variance can be explained and the probability \( F \)-Statistic is greater than 0.05. Subsequently, statistical inferences may not be drawn for PER due to the low percentage of overall fit and statistically insignificant probability values. The conclusions or implications presented in Chapter 5 will not include this variable.
4.4.3 Panel Data Random Effects Model Analysis for Dependent Variable PCFR

The price cash flow ratio is calculated as the ‘closing stock price as at the end of the fiscal year (30 June) divided by the cash flow per share of the latest fiscal year’ (Morningstar Australasia Pty Ltd 2009, p. xix).

A random effects model regression analysis was conducted for the dependent variable PCFR using the following equation:

\[ PCFR_{it} = \alpha + \beta_1 GDP_{it} + \beta_2 ALLORDS_{it} + \beta_3 CEOPAY_{it} + \beta_4 COMPLY_{it} + \beta_5 TOTALDIR_{it} + U_{it} \]

The results are expected to show positive coefficients for the explanatory variables COMPLY and TOTALDIR on the assumption that those corporations are likely to be larger corporations listed in the top 300 companies with larger boards that are required to comply with Recommendation 4.3 pursuant to ASX Listing Rule 12.7. Similarly, given that the data representing the Australian GDP for the years ending June 2006, June 2007 and June 2008 showed an increase in each year, a positive coefficient is expected for GDP.

The All Ordinaries Index (ALLORDS) reflected an increase in securities prices between June 2006 and June 2007 and a smaller reduction in securities prices between June 2007 and June 2008. Given the fluctuation in the index during the period, a positive coefficient for ALLORDS is expected. A positive coefficient is expected for CEOPAY. It is assumed that larger corporations are likely offer larger remuneration packages to attract highly skilled managers and this will have a positive impact on their corporate performance.

The results of the random effects model regression analysis for the dependent variable PCFR are presented in Table 4.8 below.
Table 4.8 – Random Effects Model Regression Analysis Results for PCFR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-161.3187</td>
<td>139.6146</td>
<td>-1.155458</td>
<td>0.2497</td>
</tr>
<tr>
<td>COMPLY</td>
<td>59.01590</td>
<td>27.03952</td>
<td>2.182580</td>
<td>0.0306</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>6.461511</td>
<td>8.236817</td>
<td>0.784467</td>
<td>0.4340</td>
</tr>
<tr>
<td>GDP</td>
<td>0.147935</td>
<td>0.089124</td>
<td>1.659876</td>
<td>0.0989</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.012457</td>
<td>0.020735</td>
<td>-0.600750</td>
<td>0.5489</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>6.15E-07</td>
<td>7.85E-06</td>
<td>0.078306</td>
<td>0.9377</td>
</tr>
</tbody>
</table>

Weighted Statistics

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$R^2$</td>
<td>0.086579</td>
<td>Mean dependent variance</td>
<td>-30.46019</td>
<td></td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.057302</td>
<td>S.D. dependent variance</td>
<td>149.8944</td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>145.5364</td>
<td>Sum squared residual</td>
<td>3304211.</td>
<td></td>
</tr>
<tr>
<td>$F$-statistic</td>
<td>2.957295</td>
<td>Durbin-Watson statistic</td>
<td>1.661541</td>
<td></td>
</tr>
<tr>
<td>Prob. ($F$-statistic)</td>
<td>0.014032</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The analysis produced positive coefficients for COMPLY, TOTALDIR, GDP and CEOPAY as expected and a negative coefficient for explanatory variable ALLORDS.

The probability result is significant ($P <0.05$) at less than 5% for explanatory variable COMPLY at 3.06%, the probability results are not significant ($P >0.05$) at greater than 5% for TOTALDIR at 43.40%, GDP at 9.89%, ALLORDS at 54.89% and CEOPAY at 93.77%.

The $R^2$-Squared coefficient of determination (0.086579) indicates that only 8.66% of the variance can be explained although the probability $F$-Statistic is less than 0.05. Statistical inferences cannot be drawn for PCFR due to the low percentage of overall fit and statistically insignificant probability values. No conclusions or implications will be presented in Chapter 5 relating to PCFR.
4.5 Conclusion

This chapter provided a background to the study period and data collection, a description of the entities that form part of this study and the variables used in this study. It further presented the results and analysis for corporate performance accounting measure dependent variables in Section 4.3. Section 4.4 presented the results and analysis of the relationship between corporate performance and shareholder measure dependent variables.

The results from the analysis of the six variables presented in this chapter reflect that measures of performance for RNP, M, PER and PCFR cannot be used to draw conclusions and implications as they presented a low percentage of overall fit and statistically insignificant probability values. Accordingly, statistical inferences may not be drawn for those four variables. Conclusions and implications from the results and analysis for performance measures ROA and ROE are presented in Chapter 5.
Chapter 5 – Conclusions and Implications

5.1 Introduction

This chapter comprises 8 sections as depicted in Figure 5.1.

Figure 5.1 – Chapter 5 Outline

The objective of this study was to determine whether compliance or non-compliance with ASX Recommendation 4.3 as part of Australia’s corporate governance reforms is related to the performance of corporations as measured by accounting methods and shareholder value methods. In order to investigate this matter, companies operating in the materials sector that are ranked in the top 500 companies listed on the ASX were analysed.
This thesis was structured using Perry’s (2002) five chapter thesis model which is depicted in Figure 5.2 below.

**Figure 5.2 – Five Chapter Thesis Model Adopted for this Thesis**

**Body of Knowledge**

<table>
<thead>
<tr>
<th>Chapter 1: Introduction</th>
<th>Chapter 2: Literature Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The Research Problem</td>
<td>• Justification of the research problem and research gap</td>
</tr>
<tr>
<td>• Overview of the research</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 3: Methodology</th>
<th>Chapter 4: Analysis of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Justification of the research paradigm</td>
<td>• Analysis of Responses</td>
</tr>
<tr>
<td>• Detailed description and justification of the procedures followed</td>
<td>• Testing of Relationships</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 5: Conclusions and Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Research problem resolved</td>
</tr>
<tr>
<td>• Implications and contributions</td>
</tr>
</tbody>
</table>

**The Research**

**Source: Barns 2002, p. 11 and Perry 2002, p. 5**

**Chapter 1** provided a broad background to the field of study. This chapter included a background to the research by describing the broad field of study. It presented the research problem, research objectives, research question, research hypotheses, and an introduction to the methodology. Definitions of the key terms used were presented, and the limitations outlined.

**Chapter 2** provided a review of the relevant literature. This chapter introduced corporate governance, the first of four parent disciplines. It provided an overview and brief history of corporate governance, corporate governance theory, the importance of corporate governance and corporate governance reforms in Australia.
The second parent discipline, corporate boards, was outlined by providing an overview of the roles and functions of corporate boards, and of the attributes of a corporate board. The effect of board size, and board diversity were discussed as well as the delegation of authority to board committees. The third parent discipline of company directors was outlined by providing an overview of company directors, and their respective duties, and of the roles and responsibilities of executive directors, and non-executive directors. The independence of non-executive directors was also discussed. The final parent discipline of corporate performance was outlined by providing an overview of the literature with respect to corporate boards and corporate performance and the independence of directors and corporate performance.

The review of the immediate discipline involved describing audit committee codes and guidelines, audit committee roles and responsibilities, the independence of audit committees, the effectiveness of audit committees, audit committee best practice and the relationship between audit committees and corporate performance. The research gap in the literature was also described.

Chapter 3 commenced by restating the research objectives, research problem, research question and research hypotheses. The various paradigms which may be applied to business research were presented and a justification was provided for choosing the positivist paradigm. The types of research considered were presented and justification was provided for using empirical exploratory research. The research methodology used and the justification for choosing a quantitative approach was outlined, together with the elements of research design, the data collection methods and data analysis were described. Quality and ethical considerations, and the limitations of the study were also discussed.

Chapter 4 presented the data analysis and a commentary of the results without drawing general conclusions or comparing the results to those of previous studies (Perry 2002, p. 34).

Chapter 5 concludes this thesis by drawing conclusions from the data analysis presented in Chapter 4 in answer to the research question and the testing of the hypotheses. This chapter further outlines the implications for theory, policy and practice, the limitations of the research and implications for further research.
5.2 Conclusions about the Research Question

This section presents the findings and conclusions from the data analysis presented in Chapter 4. Answers to the research question and tests of the hypotheses are reported and compared to the literature reviewed in Chapter 2.

The research question was designed to provide a framework that directs the data collection and delimits the scope of the research in order to discover if any relationship exists in corporations that operate within the materials sector ranked in the top 500 companies that comply and those that do not comply with ASX Recommendation 4.3 and corporate performance (Punch 1998). The research question is:

**RQ.** Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, do those that comply with ASX Recommendation 4.3, achieve higher corporate performance?

In parallel with the research question set out above, the null hypothesis (H0) and alternative hypothesis (H1) are:

**H0.** Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, there is no significant difference in corporate performance between those corporations that do not comply with ASX Recommendation 4.3 and corporations that do comply.

**H1.** Among corporations that operate within the materials sector and are ranked in the top 500 companies (by market capitalisation) listed on the ASX, there is a significant difference in corporate performance between those corporations that do not comply with ASX Recommendation 4.3 and corporations that do comply.

This study utilised secondary numerical and historical data to answer the research question and test the research hypotheses using a quantitative approach. The study included a total of 54 corporations: 30 corporations that complied with ASX Recommendation 4.3 and 24 corporations that did not comply.
Panel data estimation regression analysis was selected as a suitable statistical technique for this study because it measures the combination of both time-series data and cross-sectional data to explain the movements in each of the dependent variables and a set of other independent variables (Gujarati & Porter 2009; Studenmund 2011). The cross-sectional data is represented by the 54 corporations operating in the materials sector, the time-series data is represented by the financial years ended 30 June 2006, 30 June 2007 and 30 June 2008.

Panel data estimation allows for the individual heterogeneity of the 54 corporations operating in the materials sector, more degrees of freedom and efficiency than other forms of analysis and is better suited to studying the dynamics of adjustment or change due to the use of repeated cross-sectional observations (Baltagi 2008, p. 6 & 7). Furthermore, panel data estimation allows for more accurate measurement of variables and can reduce or eliminate bias (Baltagi 2008, p. 8).

There are several alternative panel data estimation models that can be used. The pooled model, the fixed effects model and the random effects model were considered for this study. A Hausman (1978) test was conducted for each dependent variable and the fixed effects model was selected for this study. The results of the Hausman test for each dependent variable are included in the appendix. As the 54 corporations included in this study have differences that are likely to influence each dependent variable, the random effects model was considered suitable for this study.

A random effects model regression analysis was conducted (with 6 variables in total) for dependent variables: Reported Net Profit (RNP), Return on Assets (ROA), Return on Equity (ROE), +/- Market (M), Price Earnings Ratio (PER) and Price Cash Flow Ratio (PCFR). The analysis involved examining 54 cross-sections for three periods, 2006, 2007 and 2008. This amounted to 162 total balanced panel observations. The general regression equation for each dependent variable is expressed as:

\[ Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 D_{1it} + \beta_5 D_{2it} + U_{it} \]

Where; \( Y \) is the dependent variable, \( i \) is the subject CODE, \( t \) is the YEAR, \( \beta \) is the estimated coefficient, \( X_1 \) is the GDP, \( X_2 \) is the ALLORDS, \( X_3 \) is the CEOPAY, \( D_1 \) is COMPLY, \( D_2 \) is the TOTALDIR and \( U \) represents the error term.
The results are presented in the following sections: for Reported Net Profit (RNP) in Section 4.3.1, for Return on Assets (ROA) in Section 4.3.2, for Return on Equity (ROE) in Section 4.3.3, for +/- Market (M) in Section 4.4.1, for Price Earnings Ratio (PER) in Section 4.4.2 and for Price Cash Flow Ratio (PCFR) in Section 4.4.3.

Conclusions and implications will not be drawn for the results of the random effects model regression analysis for Reported Net Profit (RNP), +/- Market (M), Price Earnings Ratio (PER) and Price Cash Flow Ratio (PCFR) for the following reasons:

**RNP.** The panel data random effects model regression analysis for the dependent variable Reported Net Profit (RNP) is not suitable as the $R^2$-Squared coefficient of determination (0.043244) is less than 5%, indicating that only 4.32% of the variance can be explained. The probability $F$-Statistic is greater than 0.05. The results produced a low percentage of overall fit and statistically insignificant probability values, as a result, a statistical inference was not drawn for RNP.

**M.** The panel data random effects model regression analysis for the dependent variable +/- Market (M) is not suitable as the $R^2$-Squared coefficient of determination (0.075389) indicates that only 7.5% of the variance can be explained and the $F$-Statistic is less than 0.05. Accordingly, with a low percentage of overall fit and statistically insignificant probability values (with the exception of GDP), statistical inferences were not drawn for M.

**PER.** The panel data random effects model regression analysis for the dependent variable Price Earnings Ratio (PER) is not suitable as the $R^2$-Squared coefficient of determination (0.044373) is less than 5%, indicating that only 4.44% of the variance can be explained and the probability $F$-Statistic is greater than 0.05. Subsequently, statistical inferences will not be drawn for PER due to the low percentage of overall fit and statistically insignificant probability values.

**PCFR.** The panel data random effects model regression analysis for the dependent variable Price Cash Flow Ratio (PCFR) is not suitable as the $R^2$-Squared coefficient of determination (0.086579) indicates that only 8.66% of the variance can be explained although the probability $F$-Statistic is less than 0.05. Statistical inferences cannot be drawn for PCFR due to the low percentage of overall fit and statistically insignificant probability values.
The results of the panel data random effects model regression analysis for the dependent variable Return on Assets (ROA) are presented in Table 4.4 of Section 4.3.2. The analysis produced positive coefficients for COMPLY, TOTALDIR and GDP and a negative coefficient for the explanatory variable ALLORDS. The explanatory variable CEOPAY produced a negative coefficient.

The probability results are significant \( P < 0.05 \) at less than 5\% for explanatory variables COMPLY (0.0097) at 0.97\%, TOTALDIR (0.0046) at 0.46\%, GDP (0.0356) at 3.56\% and CEOPAY (0.0000) at 0.00\%. The probability result for the explanatory variable ALLORDS (0.3051) at 30.51\% is not significant \( P > 0.05 \) at greater than 5\%. The \( R^2 \)-Squared coefficient of determination (0.269055) indicates that 26.9\% of the variance can be explained and the probability \( F \)-Statistic is significant (0.00) at less than 0.05.

The return on assets ratio is a profitability measure of a corporation’s ‘ability to convert sales revenue into profit, and its ability to generate income from its asset investments’ (Birt et al. 2008, p. 289). A higher return on assets ratio reflects more effective trading through profitability and asset efficiency (Birt et al. 2008, p. 290; Cooper et al. 1997, p. 230). The analysis produced a COMPLY coefficient of 12.45017 suggesting that the return on assets ratios of those corporations that complied with ASX Recommendation 4.3 were 12.45\% higher than the return on assets ratios of those organisations that did not comply.

The results of the panel data random effects model regression analysis for the dependent variable return on equity (ROE) are presented in Table 4.5 of Section 4.3.3. The analysis yielded positive coefficients for COMPLY, TOTALDIR and GDP and a negative coefficient for explanatory variable ALLORDS. The explanatory variable CEOPAY produced a negative coefficient.

The probability results were significant \( P < 0.05 \) at less than 5\% for explanatory variables COMPLY (0.0024) at 0.24\%, TOTALDIR (0.0249) at 2.49\%, and CEOPAY (0.0005) at 0.05\%. The probability results for the explanatory variables GDP (0.2869) at 28.69\% and ALLORDS (0.1047) at 10.47\% are not significant \( P > 0.05 \) at greater than 5\%. The \( R^2 \)-Squared coefficient of determination (0.184384) indicates that 18.44\% of the variance can be explained and the probability \( F \)-Statistic (0.000006) is significant at less than 0.05. Accordingly, with a percentage of overall fit and statistically significant probability values for COMPLY, TOTALDIR and CEOPAY, a statistical inference may be drawn for ROE.
The return on equity ratio is a profitability measure for the profit made by the corporation on its total equity (Birt et al. 2008, p. 289). The return on equity ratio indicates the return on the owner’s investment and reflects the direction of corporation’s profitability, asset efficiency and capital structure (Bazley, Hancock & Porter 2010, p. 428; Birt et al. 2008, p. 289; Cooper et al. 1997, p. 231). The analysis produced a COMPLY coefficient of 21.88637, thereby suggesting that the return on equity ratios of those corporations that complied with ASX Recommendation 4.3 were 21.89% higher than those organisations that did not comply.

The results of the research show that among corporations that operated within the materials sector and ranked in the top 500 companies (by market capitalisation) listed on the ASX, those that complied with ASX Recommendation 4.3, achieved higher corporate performances as measured by return on assets and return on equity. Based on the results of this study, the null (H0) hypothesis is not supported and alternative (H1) hypothesis is supported.

The literature for the immediate discipline of audit committees was reviewed in Section 2.6. The immediate discipline outlined audit committee codes and guidelines, audit committee roles and responsibilities, the independence of audit committees, the effectiveness of audit committees, audit committee best practice and the relationship between audit committees and corporate performance. The literature revealed various studies pertaining to the relationship between audit committees and corporate performance. These studies have been limited (Hamdan, Sarea & Reyad 2013; Reddy, Locke & Scrimgeour 2010, 2011) and have produced mixed results. McMullen (1996, p. 87) suggests the need for more research on the differences between companies with and without audit committees. Table 5.1 presents a summary of the conclusions drawn by various studies conducted on the relationship between audit committees and corporate performance.
Table 5.1 – Summary of Results for Studies Conducted on the Relationship between Audit Committees and Corporate Performance.

<table>
<thead>
<tr>
<th>Study</th>
<th>Conclusions</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>McKnight <em>et al.</em> 2009</td>
<td>The establishment of an audit committee and/or remuneration committee has had a positive impact on corporate performance (2009, p. 37).</td>
<td>Positive</td>
</tr>
<tr>
<td>Bozec 2005</td>
<td>The establishment of board committees does not seem to be connected with performance (2005, p. 1927).</td>
<td>Nil</td>
</tr>
<tr>
<td>Klein 1998</td>
<td>Found little evidence to suggest that monitoring committees dominated by independent directors affect firm performance (1998, pp. 293-296)</td>
<td>Nil</td>
</tr>
<tr>
<td>Vafeas and Theodorou 1998</td>
<td>Agreed with Klein (1998) and came to the same conclusion using UK data.</td>
<td>Nil</td>
</tr>
<tr>
<td>Weir and Laing 2001</td>
<td>There is little or no empirical evidence to support the proposition that board sub-committees, including audit committees, have a positive impact on corporate governance (2001, p. 86)</td>
<td>Nil</td>
</tr>
<tr>
<td>Dulewicz and Herbert 2004</td>
<td>Audit and Remuneration committees appear to have no visible impact, beneficial or otherwise, on company performance (as measured by cash flow return on total assets) (2004, p. 278).</td>
<td>Nil</td>
</tr>
<tr>
<td>Reddy, Locke and Scrimgeour 2010</td>
<td>The 'coefficient of audit committee is mixed and is not statistically significant indicating that audit committees do not enhance performance' (2010, p. 214).</td>
<td>Nil</td>
</tr>
<tr>
<td>Reddy, Locke and Scrimgeour 2011</td>
<td>The research revealed a non-significant connection between the existence of audit committee and the positive effect on financial performance (2011, p. 550).</td>
<td>Nil</td>
</tr>
<tr>
<td>Lama 2011</td>
<td>Found that the 'existence of an audit committee does not seem to impact either firm's stock volatility as measure by beta or its operating efficiency as measure by return on assets' (2011, p. 20).</td>
<td>Nil</td>
</tr>
<tr>
<td>Al-Matari <em>et al.</em> 2012</td>
<td>Concluded that the relationship between the independence of the audit committee (H1) and</td>
<td>Mixed</td>
</tr>
<tr>
<td>Study</td>
<td>Conclusions</td>
<td>Result</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Hamdan, Sarea and Reyad 2013</td>
<td>There was a positive relationship with statistical significance between audit committee characteristics and financial performance in the financial sector listed in the Amman stock exchange and there was a positive relation with statistical significance between audit committee characteristics and stock performance in the financial sector listed in the Amman stock exchange (2013, p. 41).</td>
<td>Positive</td>
</tr>
<tr>
<td>Aldaman et al. 2012</td>
<td>Smaller audit committees with more experience and financial expertise are more likely to be associated with positive firm performance in the market (2012, p. 971). Longer serving chairs of audit committees negatively impacts accounting performance (2012, p. 971). Accounting performance is positively impacted when audit committees’ include block holder representation, the chair of the board, whose members have more external directorships and whose chair has more years of managerial experience (2012, p. 971).</td>
<td>Mixed</td>
</tr>
</tbody>
</table>

Studies conducted by McKnight, Milonas, Travlos and Weir (2009), Hamdan, Sarea and Reyad (2013), Al-Matari et al. (2012) and Aldamen et al. (2012) reported a positive relationship between audit committees and corporate performance. Whilst these studies provide a positive outcome in agreement with this study, they produced different results depending on performance measures, compliance and structure variables. The results of the UK post-Cadbury Code reforms study conducted by McKnight, Milonas, Travlos and Weir (2009, p. 37) found that the establishment of audit committees had a positive impact on corporate performance. The results show a positive relationship between the existence of an audit committee and corporate performance rather than the requirements imposed on the structure audit committees.
Hamdan, Sarea and Reyad (2013) in a more recent study that included 106 corporations listed on the Amman Stock Exchange measured the characteristics of audit committee size, financial expertise and independence using three separate measures of; financial performance, operating performance and stock performance. They found a significant positive relationship between audit committee characteristics and financial and stock performance (Hamdan, Sarea & Reyad 2013, p. 41). The present study investigated similar audit committee characteristics and also produced positive results, except in the case of financial expertise.

Similarly, studies conducted by Al-Matari et al. (2012) and Aldamen et al. (2012) found a positive relationship between audit committee characteristics and corporate performance. Al-Matari et al. (2012, p. 246) found that the relationship between the size of the audit committee and firm performance was significant. In an Australian study conducted during adverse economic conditions, Aldamen et al. (2012, p. 971) found that 'smaller audit committees with more experience and financial expertise are more likely to be associated with positive firm performance in the market'. Studies conducted by Bozec (2005), Klein (1998), Vafeas and Theodorou (1998), Weir and Laing (2001), Dulewicz and Herbert (2004), Reddy, Locke and Scrimgeour (2010, 2011) and Lama (2011) did not find a positive relationship between audit committees and corporate performance.

The results of a significant comparative study conducted by Lama (2011), were not consistent with this study. Lama (2011) conducted an Australian comparative study of 100 randomly selected non-top 500 ASX listed companies of which 50 firms had an audit committee in compliance with ASX recommendation 4.3 and 50 firms did not have an audit committee. The study utilised the financial data of the 100 firms for the period 1 July 2000 to 1 July 2005 and excluded firms that did not have a 30 June reporting date (Lama 2011). The study used the performance measure of beta and return on assets and applied a means comparison and regression analysis and found that the ‘existence of an audit committee does not seem to impact either firm’s stock volatility as measured by beta or its operating efficiency as measured by return on assets’ (Lama 2011, p. 20). The present study can be differentiated from Lama’s (2011) study. Lama’s (2011) study was conducted on 100 randomly selected non-top 500 ASX listed companies. It was not industry specific and the corporations involved were likely to be from multiple GICS sectors, whereas this study was conducted on corporations that operate within the materials sector ranked in the top 500 companies.
5.3 Conclusions Relating to the Research Problem

The focus of this study is on whether compliance with the audit committee recommendations which the ASX Corporate Governance Council (2003, 2007, 2010, 2014) put forward as part of its corporate governance reforms enhances corporate performance as measured by accounting methods and shareholder value methods. Since the high profile corporate collapses in 2001 and 2002, governments, regulators, corporations and investors have focused attention on weaknesses in the corporate governance systems (Durden & Pech 2006, p. 84). As a result, vast amounts of effort through regulations, reports and recommendations have been expended worldwide to improve corporate governance (Grantham 2004; Smallman 2007).

The Australian regulatory framework is a combination of mandatory requirements and less stringent recommended guidelines. The current Australian regulatory structure promotes uniformity of corporate regulation and economies of scale in national law making and enforcement (Redmond 2005, p. 56). The implementation of corporate governance reforms and the various aspects of these reforms have been rigorously studied to determine whether they improve the economic performance of corporations (Dey 2008). The results in theory and research are both mixed and contentious (Dey 2008; Psaros 2009).

It has been argued that good corporate governance practices either improves financial performance or restricts financial performance (Psaros 2009, p. 31). Corporate governance advocates claim that good corporate governance policies are associated with positive improvements in performance as a result of improved control and better management practices (Turley & Zaman 2004, p. 309). The benefits of these policies extend to economic growth and the reduced risk of fraud and corporate collapse (Bosch 1995a, p. 272). Opponents suggest that over-regulation may distract or hinder management in their performance and could be as dangerous as under-regulation (Durden & Pech 2006, p. 85 & 89).

The ASX Corporate Governance Council released its ‘Principles of Good Corporate Governance and Best Practice Recommendations’ which contained ten core principles of best practice (ASX Corporate Governance Council 2003). The ASX (2003) acknowledged that the ASX Corporate Governance Council’s recommendations cannot be enforced and will not prevent corporate failure or mistake, however, they do provide guidance to reduce
the risk of problems and enhance performance and accountability (ASX Corporate Governance Council 2003, p. 3).

Various codes, reports and legislation have been introduced which require an audit committee presence in an attempt to increase the quality and validity of financial reporting (Pergola 2005, p. 177). Audit committee studies have largely focused on; the roles and responsibilities of audit committees (Chambers 2005b, p. 96; Harrington 2003, p. 20; Hemraj 2003, p. 153; Hunt & Carey 2001, p. 38; Livingston 2005, p. 24; Petra 2005, p. 58), the independence of audit committee members (Abbott, Park & Parker 2000, p. 55; Brennan & McDermott 2004, p. 325; Clifford & Evans 1997, p. 226; Goodwin 2003, p. 264; McMullen 1996; Petra 2005, p. 58; Song & Windram 2004, p. 195; Spira 1999a, p. 262) and audit committee effectiveness (DeZoort et al. 2002; Spira 1999b).

The literature reviewed in Section 2.6.7 on the correlation between audit committees and corporate performance has been limited and inconclusive and the topic has not been fully explored (Turley & Zaman 2004, p. 322). Since the Australian corporate governance reforms were introduced, there has been limited research on the correlation between audit committees and corporate performance (Hutchinson, Percy & Erkurtoglu 2008). The research (Bozec 2005; Dulewicz & Herbert 2004; Hamdan, Sarea & Reyad 2013; Klein 1998; Lama 2011; McKnight et al. 2009; Reddy, Locke & Scrimgeour 2010, 2011; Vafeas & Theodorou 1998; Weir & Laing 2001) that has been conducted on the correlation between audit committees and corporate performance has produced inconsistent results.

There is a gap in the literature on the correlation between audit committees and corporate performance from an Australian perspective, as the current literature does not adequately address the research problem. The objective of this study is to address the gap in the literature by examining whether compliance or non-compliance of ASX Recommendations 4.3 as part of Australia’s corporate governance reforms, is related to the performance of corporations. In order to investigate this matter, companies operating in the materials sector that were ranked in the top 500 companies listed on the ASX were analysed.

The results of this study addressed the research problem by concluding that among corporations that operated within the materials sector and ranked in the top 500 companies (by market capitalisation) listed on the ASX, those that complied with ASX Recommendation 4.3, achieved higher corporate performances as measured by return on assets and return on equity.
5.4 Implications for Theory and Methodology

Section 2.2 reviewed the contrasting theories of corporate governance. This section presents the implications of the research for both theory and methodology.

5.4.1 Implications for Theory

Agency theory is the most common and prominent theory in the corporate governance literature (Psaros 2009). The theory emanates from the work of Berle and Means (1932) which highlighted the issue of separation of ownership and control (Psaros 2009). Agency theory refers to the relationship between agents (managers) and principals (shareholders) where the principals direct work to the agents who perform the work (Eisenhardt 1989). Agency theory argues that to eliminate agency problems, the principals need to align the self-interest of managers with the interests of shareholders (Rubach & Picou 2005).

In agency theory, ‘corporate governance structures, policies and relationships are considered important mechanisms to help overcome agency problems’ (Psaros 2009, p. 15). In line with agency theory, shareholders aim to reduce agency problems by structuring independent boards and independent audit, remuneration and nomination committees to reduce monitoring and bonding costs associated with managing the agency relationship (Psaros 2009, pp. 14-15). Agency theory is most prominently aligned with corporate governance reforms adopted in Australia in an attempt to minimise the conflicts that may arise through governance codes and regulation (Lama 2011; Psaros 2009). Lama (2011, p. 15) argues that ‘the presence of an audit committee potentially and significantly reduce the agency costs’ by increasing transparency. This is achieved by audit committees assisting the company directors to function efficiently (Hemraj 2003, p. 153) by providing oversight, intended to protect the interests of all stakeholders (Petra 2005, p. 58) and ensure the integrity of the internal audit and of the corporation’s external auditors who have the ultimate responsibility for the audit process and the accuracy of the financial statements (Bavly 1999; Brountas 2004; Cochran & Wartick 1998; Petra 2005; The Business Rountable 1997).

The research concludes that among corporations that operated within the materials sector and ranked in the top 500 companies (by market capitalisation) listed on the ASX, those that complied with ASX Recommendation 4.3, achieved higher corporate performances as measured by return on assets and return on equity. The findings of this study provide
support for the principles of agency theory which hold that the best interests of the shareholders should be preserved.

5.4.2 Implications for Methodology

This study makes a methodological contribution by establishing that panel data estimation regression analysis is a suitable statistical technique for use in studies that measure both time-series data and cross-sectional data in an attempt to explain the movements in one dependent variable and a set of independent variables (Gujarati & Porter 2009; Studenmund 2011).

Panel data estimation allows for individual heterogeneity of the subjects, more degrees of freedom and efficiency, and it is better suited to studying the dynamics of adjustment or change due to the repeated use of cross-sectional observations (Baltagi 2008, p. 6 & 7). Furthermore, panel data estimation allows for more accurate measurement of variables and can reduce or eliminate bias (Baltagi 2008, p. 8). The random effects model does not eliminate the time-invariant explanatory variables and 'produces a more efficient estimator of the slope coefficients variables' (Kennedy 2008, p. 284).

Prior studies conducted on the relationship between audit committees and corporate performance have used a range of analysis techniques. The methods used include; multivariate regression analysis (Bozec 2005), cross-sectional regression analysis (Klein 1998, 2002), cross-sectional logit model equation 2 (Aldamen et al. 2012), multiple linear and multiple regression of ordinary least squares analysis (Al-Matari et al. 2012; Hamdan, Sarea & Reyad 2013), means comparison and regression analysis (Lama 2011), factor analysis and t-tests (Dulewicz & Herbert 2004) and the use of panel data ordinary least squares and two staged least squares regression techniques (Reddy, Locke & Scrimgeour 2010, 2011).

A study conducted by McKnight, Milonas, Travlos and Weir (2009) used a panel data equation approach using both fixed effects and random effects models. Similarly, they used two measures of corporate performance: accounting measures and shareholder measures (McKnight et al. 2009). This study validates the use of panel data estimation regression analysis as a suitable statistical technique for investigating the relationship between audit committee operations and corporate performance.
5.5 Implications for Policy and Practice

This section presents the implications of the research for both policy and practice.

5.5.1 Implications for Regulators

The implementation of corporate governance reforms, and the various aspects of such reforms, have been rigorously studied to determine whether they improve the economic performance of corporations (Dey 2008). The results in theory and research are both mixed and contentious (Dey 2008; Psaros 2009). It is argued that good corporate governance practices either improve financial performance or restricts financial performance (Psaros 2009, p. 31). Corporate governance advocates claim that good corporate governance policies are associated with improvements in performance as a result of improved control and better management practices (Turley & Zaman 2004, p. 309).

The ASX Corporate Governance Council released its ‘Principles of Good Corporate Governance and Best Practice Recommendations’ which contained ten core recommended principles of best practice (ASX Corporate Governance Council 2003). The ASX (2003) acknowledged that the ASX Corporate Governance Council’s recommendations cannot be enforced and will not prevent corporate failure or mistake, however, they do provide guidance on reducing the risk of problems and enhancing performance and accountability (ASX Corporate Governance Council 2003, p. 3).

The 2003 audit committee recommendations of ASX Corporate Governance Council were presented in Table 1.1. In 2007 and further in 2010, the ASX Corporate Governance Council repeated the recommendations in subsequent versions by renaming Recommendation 4.2 as Recommendation 4.1 and Recommendation 4.3 as Recommendation 4.2 (ASX Corporate Governance Council 2007, 2010). The 2014 amendments renamed Principle 4 as ‘Safeguard Integrity in Corporate Reporting’ and simplified the previous requirements by listing them all under Recommendation 4.1 (ASX Corporate Governance Council 2014).

This study concludes that among corporations that operate within the materials sector, those that comply with ASX Recommendation 4.3, achieve higher corporate performance than those corporations that do not. The results provide evidence that the ASX Recommendations for audit committees enhance performance and accountability.
Currently, the ASX Listing Rule 12.7 requires the top 300 corporations listed on the exchange to comply with Recommendation 4.3 (ASX Corporate Governance Council 2003, 2007, 2010, 2014). This study provides support for this rule being extended to the top 500 or for all companies listed on the exchange. However, this would be subject to further testing for smaller listed companies outside the top 500.

5.5.2 Implications for Audit Committees

An ‘audit committee is a sub-committee of the board’ with delegated authority from a corporation’s board of directors (Spira 1999b, p. 231; Turpin & DeZoort 1998, p. 35). Representatives and participants of the audit committee are independent non-executive directors (Spira 1999b, p. 231) entrusted with liaising between management, internal auditors and external auditors (Chen, Moroney & Houghton 2005, p. 218) and overseeing the overall financial reporting and auditing functions (DeZoort 1997, p. 208). Audit committees gained popularity after high profile corporate collapses which were associated with a loss in confidence in the ‘reliability and integrity of financial reports’ (Chen, Moroney & Houghton 2005, p. 217; Lin, Li & Yang 2006, p. 921; Vanasco 1994, p. 25).

An outgrowth of codes, guidelines and recommendations in support of mandatory audit committees emerged as a result of earning restatements and fraud that led to high profile corporate collapses (Rezaee, Olibe & Minmier 2003, p. 530). The purpose of these codes and guidelines was to restore public confidence in financial reporting without the need for government intervention (Spira 2003, p. 181).

The main purpose of audit committees is to assist the company directors to function efficiently (Hemraj 2003, p. 153) and to ensure that their members possess ‘common sense, wide experience, independence, and good judgment’ (Hunt & Carey 2001, p. 38). The audit committee’s primary role is oversight, which is intended to protect the interests of all stakeholders (Petra 2005, p. 58). Audit committees are now considered to be a ‘corporate governance mechanism’ (Carson 2002, p. 4; DeZoort 1997, p. 208; Spira & Bender 2004, p. 489). Similarly, Psaros (2009, p. 114) suggests they are a ‘crucial component of effective corporate governance’.

Audit committees as a corporate governance mechanism have attracted a considerable amount of interest (Stewart & Munro 2007, p. 52). The connection between audit committees and corporate performance has not been fully examined (Turley & Zaman 2004, p. 322). The result of this research supports the proposition that audit committees

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that comply with ASX recommendation 4.3 in addition to their oversight responsibilities represent an effective component of corporate governance that also results in improved corporate performance.

5.5.3 Implications for Stakeholders

Corporations have grown in both size and complexity over the last twenty-five years and with increased direct investment, some of these corporations are larger than some smaller sovereign countries and have a significant impact on the world economy (Schouten 2007, p. 16). The size and impact of large organisations has led to intense debate about whose interests these corporations serve and who is controlling them (Letza et al. 2008; Letza, Sun & Kirkbride 2004).

Stakeholder theory recognises that there are many types of corporate relationships which need to be considered, not just those between managers and shareholders (Psaros 2009). The rationale for this view is that ‘all stakeholders are impacted upon and also impact on the corporation’ (Psaros 2009, p. 15). A stakeholder can be defined as ‘any party that has an interest in property, an action or undertaking, or a decision made by the corporation’ (Shailer 2004, p. 14) and ‘any group or individual who can affect or is affected by the achievement of the organisation’s objectives’ (Freeman 1984, p. 46).

The OECD, in its functional definition of corporate governance supports the stakeholder theory perspective, arguing that considering the needs of all stakeholders contributes to ‘stability and equity of society’ (Clarke 2004, pp. 1-2), which is vital for investment and economic growth (Farrar 2003, p. 67). Other proponents of this view include Sir Adrian Cadbury. Cadbury, argued that the aim of corporate governance is to ‘align as nearly as possible the interests of individuals, corporations and society’ (Clarke 2004, p. 2).

Lama (2011) and Psaros (2009) state that agency theory is most prominently aligned with corporate governance (Lama 2011; Psaros 2009). The findings of this research also have positive implications for all stakeholders if the corporations are improving corporate performance by complying with the audit committee requirements which are part of corporate governance regulations and guidelines.
5.6 Limitations

This thesis has three limitations that need to be acknowledged and considered when interpreting the results.

The first limitation relates to the study sample. The study is industry specific as it is limited to Australian Corporations ranked in the top 500 companies (by market capitalisation) listed on the ASX operating in the materials sector. In order to provide consistency, validity and reliability and decrease the complexity of this study, only corporations operating in the same GICS sector were included. The materials sector comprised 97 corporations representing 19.4% of the top 500 companies on the stock exchange. The 54 corporations involved in this study provided a reasonable representation in each of the top 100, 200, 300 and 500 rankings by market capitalisation listed on the ASX. Studies that have used a similar sample size include Aras, Aybars and Kutlu (2010), Bozec (2005), and Reddy, Locke and Scrimgeour (2010).

The second limitation relates to the data and time period. The financial data gathered for the selected corporations was limited to the financial years ending 30 June 2006, 30 June 2007 and 30 June 2008 and was obtained from the 2009 publication 'Morningstar Shareholder, The Handbook of Australia’s Top 500 Companies' (Morningstar Australasia Pty Ltd 2009) and the annual reports of each company. The quality and accuracy of this data is dependent upon the audited annual reports of each corporation and the data extracted from 'Morningstar Shareholder, The Handbook of Australia’s Top 500 Companies' (Morningstar Australasia Pty Ltd 2009). The researcher began collecting data in June 2009 for the financial years ended 30 June 2006, 30 June 2007 and 30 June 2008 to ensure the study represented the most current data at that time. Three years of data was collected in order to measure corporate performance across the variables.

The final limitation refers to the variables used in this study. On account of the wide range of issues that can impact corporate performance and metrics, a set of variables was tested. The number of variables that could be used outside of the included variables is extensive and diverse and therefore too large for this study. A number of corporate performance accounting measure variables and corporate performance shareholder measures are expressed as ratios. The validity and reliability of ratio analysis is dependent on the quality and accuracy of that data (Birt et al. 2008, p. 308).
5.7 Implications for Further Research

The main finding of this study is that among corporations that operated within the materials sector and ranked in the top 500 companies (by market capitalisation) listed on the ASX, those that complied with ASX Recommendation 4.3, achieved higher corporate performances as measured by return on assets and return on equity, than those corporations that did not comply with this recommendation. Given the importance of corporate governance regulation and corporate performance, the conclusions and implications of this study highlight a number of future research opportunities.

This research only examined the performances of corporations that operate within the materials sector listed on the ASX and ranked in the top 500 companies by market capitalisation. In order to overcome the first limitation relating to the size of the study, and to compare the outcomes of this research to findings from other studies, further research could extend to other corporations operating in other GICS sectors. Similarly, this research could be generalised by replicating the models used to further conduct research on all of the top 500 companies listed on the stock exchange across all GICS sectors. By adopting this approach, this further research will provide comparative results across all sectors rather than industry specific outcomes.

The second and third limitations can be overcome by conducting further studies using alternative data sets with alternative variables. The researcher began collecting data in June 2009 for the financial years ended 30 June 2006, 30 June 2007 and 30 June 2008 to ensure the study represented the most current data at that time. Three years of data was collected in order to measure corporate performance across the variables. This research could be replicated by using new data sets to confirm the results and provide additional evidence supporting the theory.

The primary focus of this research is on the effect of compliance with ASX Recommendation 4.3 by corporations operating in the materials sector. The literature reviewed in Section 2.2.4 presented a number of corporate governance reforms in Australia. This scope of this study could be extended by examining the impact of compliance with a number those reforms adopting a complexity approach to assess the implications for corporate performance.

The results of this study are limited to an Australian context. In addition to corporate governance reforms in Australia that were reviewed in Section 2.2.4, vast amounts of
effort worldwide, in the form of reports and recommendations, have been commissioned to identify and implement corporate governance best practice (Grantham 2004; Smallman 2007). This research could be extended to investigate similar elements of audit committee regulation imposed on corporations in other countries to compare corporate performance results and provide interactive effects.

5.8 Conclusion

The results of the research show that among corporations that operated within the materials sector and ranked in the top 500 companies (by market capitalisation) listed on the ASX, those corporations that complied with ASX Recommendation 4.3, achieved higher corporate performances as measured by return on assets and return on equity, than those corporations that did not comply. The results of this study answered the research question and addressed the gap in the literature from an Australian perspective.

This research has made a contribution to both theory and practice by:

1. Validating the use of panel data estimation regression analysis as a suitable statistical technique in this and further studies.

2. Providing confirmatory evidence to support the claim that ASX Recommendations provide guidance to reduce the risk of problems and enhance performance and accountability (ASX Corporate Governance Council 2003, p. 3).

3. Provide confirmation that in addition to their oversight responsibilities, audit committees that comply with ASX Recommendation 4.3 represent an effective component of corporate governance and their adoption results in higher corporate performance.

The conclusions and implications of this study point to a number of future research opportunities and indicate ways in which corporations can improve management, operational effectiveness, and corporate performance. They also provide legislators and regulators with the opportunity to further enhance their corporate governance reforms.


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1. **Hausman Test for Dependent Variable – RNP**

Correlated Random Effects – Hausman Test

Equation: RNPTEST
Test cross-section random effects

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>0.000000</td>
<td>4</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed</th>
<th>Random</th>
<th>Var(Diff.)</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTALDIR</td>
<td>-57.420637</td>
<td>-36.936851</td>
<td>13.844133</td>
<td>0.0000</td>
</tr>
<tr>
<td>GDP</td>
<td>0.235378</td>
<td>0.188315</td>
<td>0.000069</td>
<td>0.0000</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>0.024874</td>
<td>0.022320</td>
<td>0.000000</td>
<td>0.0000</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>0.000011</td>
<td>0.000014</td>
<td>0.000000</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Cross-section random effects test equation:

Dependent Variable: RNP
Method: Panel Least Squares
Date: 02/04/15   Time: 12:06
Sample: 2006 2008
Periods included: 3
Cross-sections included: 54
Total panel (balanced) observations: 162

WARNING: estimated coefficient covariance matrix is of reduced rank

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1.777369</td>
<td>0.0784</td>
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<tr>
<td>COMPLY</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>TOTALDIR</td>
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<td>0.0175</td>
</tr>
<tr>
<td>GDP</td>
<td>0.235378</td>
<td>0.105223</td>
<td>2.236957</td>
<td>0.0274</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>0.024874</td>
<td>0.022077</td>
<td>1.126667</td>
<td>0.2625</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>1.08E-05</td>
<td>1.26E-05</td>
<td>0.858860</td>
<td>0.3924</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)

| R-squared | 0.996592 | Mean dependent var | 339.1049 |
| Adjusted R-squared | 0.994725 | S.D. dependent var | 2066.547 |
| S.E. of regression | 150.0986 | Akaike info criterion | 13.13331 |
| Sum squared resid | 2343078. | Schwarz criterion | 14.23874 |
| Log likelihood | -1005.798 | Hannan-Quinn criter. | 13.58213 |
| F-statistic | 533.5876 | Durbin-Watson stat | 2.121046 |
| Prob(F-statistic) | 0.000000 |

Source: Developed for this research using EViews Student Version 8
2. **Hausman Test for Dependent Variable – ROA**

Correlated Random Effects – Hausman Test  
Equation: ROARTEST  
Test cross-section random effects

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>11.001127</td>
<td>4</td>
<td>0.0266</td>
</tr>
</tbody>
</table>

Cross-section random effects test comparisons:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed</th>
<th>Random</th>
<th>Var(Diff.)</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTALDIR</td>
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<td>3.396400</td>
<td>2.579251</td>
<td>0.0315</td>
</tr>
<tr>
<td>GDP</td>
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<td>0.0098</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.001142</td>
<td>-0.001891</td>
<td>0.000000</td>
<td>0.0009</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>-0.000007</td>
<td>-0.000006</td>
<td>0.000000</td>
<td>0.0042</td>
</tr>
</tbody>
</table>

Cross-section random effects test equation:  
Dependent Variable: ROA  
Method: Panel Least Squares  
Date: 02/04/15  
Time: 12:14  
Sample: 2006 2008  
Periods included: 3  
Cross-sections included: 54  
Total panel (balanced) observations: 162  
WARNING: estimated coefficient covariance matrix is of reduced rank

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>13.81026</td>
<td>-0.397180</td>
<td>0.6920</td>
</tr>
<tr>
<td>COMPLY</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>-0.056636</td>
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<td>0.9774</td>
</tr>
<tr>
<td>GDP</td>
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<tr>
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</tr>
<tr>
<td>CEOPAY</td>
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</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)

<table>
<thead>
<tr>
<th>R-squared</th>
<th>Adjusted R-squared</th>
<th>S.E. of regression</th>
<th>Sum squared resid</th>
<th>Log likelihood</th>
<th>F-statistic</th>
<th>Prob(F-statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.760462</td>
<td>0.651773</td>
<td>12.58960</td>
<td>16483.79</td>
<td>-604.2935</td>
<td>5.792443</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Source: Developed for this research using EViews Student Version 8
3. Hausman Test for Dependent Variable – ROE

Correlated Random Effects – Hausman Test
Equation: ROERTEST
Test cross-section random effects

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>0.000000</td>
<td>4</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed</th>
<th>Random</th>
<th>Var(Diff.)</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>-1.439</td>
<td>4.391</td>
<td>11.603</td>
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</tr>
<tr>
<td>GDP</td>
<td>0.031</td>
<td>0.017</td>
<td>0.000</td>
<td>0.042</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.004</td>
<td>-0.005</td>
<td>0.000</td>
<td>0.019</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>-0.000</td>
<td>-0.000</td>
<td>0.000</td>
<td>0.099</td>
</tr>
</tbody>
</table>

Cross-section random effects test equation:
Dependent Variable: ROE
Method: Panel Least Squares
Date: 02/04/15  Time: 12:17
Sample: 2006 2008
Periods included: 3
Cross-sections included: 54
Total panel (balanced) observations: 162

WARNING: estimated coefficient covariance matrix is of reduced rank

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>21.566</td>
<td>27.147</td>
<td>0.794</td>
<td>0.428</td>
</tr>
<tr>
<td>COMPLY</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>TOTALDIR</td>
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<td>3.919</td>
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</tr>
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<td>CEOPAY</td>
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</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
<th>Description</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
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<td>Mean dependent var</td>
<td>4.226296</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.449680</td>
<td>S.D. dependent var</td>
<td>33.35961</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>24.74734</td>
<td>Akaike info criterion</td>
<td>9.528157</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>63692.82</td>
<td>Schwarz criterion</td>
<td>10.63359</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-713.7807</td>
<td>Hannan-Quinn criter.</td>
<td>9.376981</td>
</tr>
<tr>
<td>F-statistic</td>
<td>3.308019</td>
<td>Durbin-Watson stat</td>
<td>3.096968</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed for this research using EViews Student Version 8
4. **Hausman Test for Dependent Variable – M**

Correlated Random Effects – Hausman Test
Equation: MRTEST
Test cross-section random effects

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>5.653259</td>
<td>4</td>
<td>0.2266</td>
</tr>
</tbody>
</table>

**WARNING: estimated cross-section random effects variance is zero.**

Cross-section random effects test comparisons:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed</th>
<th>Random</th>
<th>Var(Diff.)</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTALDIR</td>
<td>32.991944</td>
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<td>567.452577</td>
<td>0.1075</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.269891</td>
<td>-0.212470</td>
<td>0.002680</td>
<td>0.2655</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>0.022644</td>
<td>0.019457</td>
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<td>0.4020</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>-0.000027</td>
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<td>0.000000</td>
<td>0.0794</td>
</tr>
</tbody>
</table>

Cross-section random effects test equation:
Dependent Variable: M
Method: Panel Least Squares
Date: 02/04/15   Time: 12:20
Sample: 2006 2008
Periods included: 3
Cross-sections included: 54
Total panel (balanced) observations: 162
WARNING: estimated coefficient covariance matrix is of reduced rank

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
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<tr>
<td>COMPLY</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>32.99194</td>
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<td>0.1999</td>
</tr>
<tr>
<td>GDP</td>
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<td>0.113205</td>
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</tr>
<tr>
<td>ALLORDS</td>
<td>0.022644</td>
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<td>0.3426</td>
</tr>
<tr>
<td>CEOPAY</td>
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<td>1.35E-05</td>
<td>-1.983478</td>
<td>0.0500</td>
</tr>
</tbody>
</table>

Effects Specification
Cross-section fixed (dummy variables)

| Source: Developed for this research using EViews Student Version 8 |
5. Hausman Test for Dependent Variable – PER

Correlated Random Effects – Hausman Test
Equation: PERRTEST
Test cross-section random effects

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>0.000000</td>
<td>4</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed</th>
<th>Random</th>
<th>Var(Diff.)</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTALDIR</td>
<td>8.237622</td>
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<td>373.271752</td>
<td>0.8111</td>
</tr>
<tr>
<td>GDP</td>
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<td>0.001774</td>
<td>0.7545</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.013282</td>
<td>-0.012041</td>
<td>0.000009</td>
<td>0.6753</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>0.000012</td>
<td>0.000009</td>
<td>0.000000</td>
<td>0.7216</td>
</tr>
</tbody>
</table>

Cross-section random effects test equation:
Dependent Variable: PER
Method: Panel Least Squares
Date: 02/04/15   Time: 12:22
Sample: 2006 2008
Periods included: 3
Cross-sections included: 54
Total panel (balanced) observations: 162
WARNING: estimated coefficient covariance matrix is of reduced rank

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.6669</td>
</tr>
<tr>
<td>COMPLY</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>8.237622</td>
<td>21.42779</td>
<td>0.384436</td>
<td>0.7014</td>
</tr>
<tr>
<td>GDP</td>
<td>0.045871</td>
<td>0.094839</td>
<td>0.483675</td>
<td>0.6296</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.013282</td>
<td>0.019899</td>
<td>-0.667498</td>
<td>0.5059</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>1.18E-05</td>
<td>1.13E-05</td>
<td>1.043399</td>
<td>0.2992</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.465034</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.171831</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>135.2868</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>1903463.</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-988.9668</td>
</tr>
<tr>
<td>F-statistic</td>
<td>1.586048</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.021075</td>
</tr>
</tbody>
</table>

Source: Developed for this research using EViews Student Version 8
6. **Hausman Test for Dependent Variable – PCFR**

Correlated Random Effects – Hausman Test
Equation: PCFRRTEST
Test cross-section random effects

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>0.000000</td>
<td>4</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

* Cross-section test variance is invalid. Hausman statistic set to zero.

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed</th>
<th>Random</th>
<th>Var(Diff.)</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTALDIR</td>
<td>-16.13706</td>
<td>6.461511</td>
<td>443.832908</td>
<td>0.2834</td>
</tr>
<tr>
<td>GDP</td>
<td>0.152911</td>
<td>0.147935</td>
<td>0.002080</td>
<td>0.9131</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.021833</td>
<td>-0.012457</td>
<td>0.000011</td>
<td>0.0053</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>0.000034</td>
<td>0.000001</td>
<td>0.000000</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

Cross-section random effects test equation:
Dependent Variable: PCFR
Method: Panel Least Squares
Date: 02/04/15   Time: 12:24
Sample: 2006 2008
Periods included: 3
Cross-sections included: 54
Total panel (balanced) observations: 162
WARNING: estimated coefficient covariance matrix is of reduced rank

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-3.550452</td>
<td>156.6630</td>
<td>-0.022663</td>
<td>0.9820</td>
</tr>
<tr>
<td>COMPLY</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>TOTALDIR</td>
<td>-16.13706</td>
<td>22.62030</td>
<td>-0.713388</td>
<td>0.4772</td>
</tr>
<tr>
<td>GDP</td>
<td>0.152911</td>
<td>0.100117</td>
<td>1.527317</td>
<td>0.1297</td>
</tr>
<tr>
<td>ALLORDS</td>
<td>-0.021833</td>
<td>0.021006</td>
<td>-1.039375</td>
<td>0.3010</td>
</tr>
<tr>
<td>CEOPAY</td>
<td>3.38E-05</td>
<td>1.20E-05</td>
<td>2.820651</td>
<td>0.0057</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.413606</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.092216</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>142.8159</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>212.2223</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-997.7405</td>
</tr>
<tr>
<td>F-statistic</td>
<td>1.286931</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.132720</td>
</tr>
</tbody>
</table>

Source: Developed for this research using EViews Student Version 8
## Summary Statistics for Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>PCFR</th>
<th>PER</th>
<th>RNP</th>
<th>ROA</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>82.69679</td>
<td>-30.46019</td>
<td>-35.30105</td>
<td>339.1049</td>
<td>0.655185</td>
<td>4.226296</td>
</tr>
<tr>
<td>Median</td>
<td>35.14000</td>
<td>4.985000</td>
<td>6.380000</td>
<td>6.000000</td>
<td>3.810000</td>
<td>5.220000</td>
</tr>
<tr>
<td>Maximum</td>
<td>1297.100</td>
<td>988.8100</td>
<td>404.4900</td>
<td>15988.00</td>
<td>49.33000</td>
<td>161.7000</td>
</tr>
<tr>
<td>Minimum</td>
<td>-92.22000</td>
<td>-639.5000</td>
<td>-989.5800</td>
<td>-77.00000</td>
<td>-108.9700</td>
<td>-123.4500</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>3.880756</td>
<td>1.275504</td>
<td>-4.057034</td>
<td>7.138292</td>
<td>-1.933864</td>
<td>-0.367648</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>23.66203</td>
<td>21.62812</td>
<td>24.53320</td>
<td>52.31356</td>
<td>10.65826</td>
<td>8.704541</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>3288.334</td>
<td>2386.224</td>
<td>3574.237</td>
<td>17790.63</td>
<td>496.8559</td>
<td>223.3066</td>
</tr>
<tr>
<td>Probability</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
</tr>
<tr>
<td>Sum</td>
<td>13396.88</td>
<td>-4934.550</td>
<td>-5718.770</td>
<td>54935.00</td>
<td>106.1400</td>
<td>684.6600</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>4445163.</td>
<td>3617401.</td>
<td>3558098.</td>
<td>6.88E+08</td>
<td>68814.97</td>
<td>179171.0</td>
</tr>
<tr>
<td>Observations</td>
<td>162</td>
<td>162</td>
<td>162</td>
<td>162</td>
<td>162</td>
<td>162</td>
</tr>
</tbody>
</table>
8. Summary Statistics for Independent Variables

<table>
<thead>
<tr>
<th></th>
<th>COMPLY</th>
<th>TOTALDIR</th>
<th>GDP</th>
<th>ALLORDS</th>
<th>CEOPAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.555556</td>
<td>5.493827</td>
<td>885.2000</td>
<td>5559.133</td>
<td>1413571.</td>
</tr>
<tr>
<td>Median</td>
<td>1.000000</td>
<td>5.000000</td>
<td>853.4000</td>
<td>5332.800</td>
<td>645685.0</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.000000</td>
<td>14.00000</td>
<td>1055.000</td>
<td>6310.600</td>
<td>10619925</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.000000</td>
<td>3.000000</td>
<td>747.2000</td>
<td>5034.000</td>
<td>38150.00</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.498445</td>
<td>2.016229</td>
<td>128.0507</td>
<td>546.8798</td>
<td>1850561.</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.223607</td>
<td>1.306599</td>
<td>0.358205</td>
<td>0.551171</td>
<td>2.431456</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.050000</td>
<td>5.646833</td>
<td>1.500000</td>
<td>1.500000</td>
<td>9.045338</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>27.01688</td>
<td>93.38305</td>
<td>18.65190</td>
<td>23.38980</td>
<td>406.3096</td>
</tr>
<tr>
<td>Probability</td>
<td>0.000001</td>
<td>0.000000</td>
<td>0.000089</td>
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<td>0.000000</td>
</tr>
<tr>
<td>Sum</td>
<td>90.00000</td>
<td>890.0000</td>
<td>143402.4</td>
<td>900579.6</td>
<td>2.29E+08</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>40.00000</td>
<td>654.4938</td>
<td>2639913.</td>
<td>48151473</td>
<td>5.51E+14</td>
</tr>
<tr>
<td>Observations</td>
<td>162</td>
<td>162</td>
<td>162</td>
<td>162</td>
<td>162</td>
</tr>
</tbody>
</table>
9. Correlation Matrix for Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>PCFR</th>
<th>PER</th>
<th>RNP</th>
<th>ROA</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>1.000000</td>
<td>-0.257505</td>
<td>-0.217162</td>
<td>-0.061574</td>
<td>-0.113331</td>
<td>-0.119712</td>
</tr>
<tr>
<td>PCFR</td>
<td>-0.257505</td>
<td>1.000000</td>
<td>0.579392</td>
<td>0.045862</td>
<td>0.120899</td>
<td>0.344888</td>
</tr>
<tr>
<td>PER</td>
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<td>1.000000</td>
<td>0.055870</td>
<td>0.100667</td>
<td>0.125977</td>
</tr>
<tr>
<td>RNP</td>
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<td>0.055870</td>
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<td>0.163831</td>
<td>0.176622</td>
</tr>
<tr>
<td>ROA</td>
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<td>0.120899</td>
<td>0.100667</td>
<td>0.163831</td>
<td>1.000000</td>
<td>0.858887</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.119712</td>
<td>0.344888</td>
<td>0.125977</td>
<td>0.176622</td>
<td>0.858887</td>
<td>1.000000</td>
</tr>
</tbody>
</table>