

https://dspace.org/

Board of Directors and Company

Rajcoomar, Rajendra

2011-06-08
http://hdl.handle.net/10539/10048

Downloaded from a DSpace repository. https://dspace.org/

University of Witwatersrand

Wits Business School

RESEARCH REPORT

Board of Directors and Company Performance in South Africa

Rajendra Rajcoomar

Student number: 0516856N

MBA PT 2006/8 (Jan Intake)

A research report submitted to the Faculty of Commerce, Law and Management, University of Witwatersrand, Johannesburg in partial fulfilment of the requirements for the degree of Masters of Business Administration.

Johannesburg

September 2008

ABSTRACT

This research report set out to investigate the relationship that corporate governance, as it pertains to the board of directors, has with the financial performance of companies in South Africa.

The critical corporate governance elements; total number of board members, % of independent board members as a % of total board members, % of directors who missed over 25% of meetings, Independent Chairman of board, independent of the CEO and annual performance assessment of directors were used to test the relationship with measures of financial performance, namely: Tobin's Q, EPS, ROA and ROE. These elements encompassed the essentials of board activities, independence of directors, board size and separation of roles of the chairman and CEO.

From the literature review, three propositions came to the fore; namely, board composition, board size and separation of roles of the chairman and CEO that impacted the financial performance of a company. In order to test these propositions, data was gathered from the research conducted by Grant and Motara (2006) as contained in the Deutsche Securities Report 2006. A sample of 46 companies listed on the JSE in 2006 was used. Regression equations for the measures of financial performance were estimated to test the relationship between corporate governance, as it pertains to the Board of Directors and the financial performance of the company as measured by Tobin's Q, EPS, ROA and ROE.

The results have revealed that the financial performance of the company in respect of Tobin's Q is not strongly related to the composition of the board in terms of the number of independent directors. The size of the Board is critical in explaining EPS. It is clear that the board is pivotal in steering the company and supporting management. Separating the roles of the Chairman of the Board and the CEO has no significant relationship with the financial performance of a company as measured by the ROA however increasing the percentage of independent directors as a percentage of total directors has a significant

relationship with ROA. No significant relationship between ROE and board activities could be found.

The results obtained are not consistent in all respects with the results of international studies. As the Board of Directors are being called more into question, these results confirm that board structure and size has an influence on the financial performance of a company. The Board of Directors is therefore critical in steering the company towards shareholder wealth maximisation.

DECLARATION

I, Rajendra Rajcoomar declare that this research report is my own unaided work. It is submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, Johannesburg in partial fulfilment of the requirements for the degree of Masters of Business Administration. It has not been submitted before for any degree or examination at this or any other university.

_____

Rajendra Rajcoomar

Student No. 0516856N

September 2008

ACKNOWLEDGEMENTS

I wish to express my sincere thanks to:

- Professor Mthuli Ncube, my supervisor, for his time, support, encouragement, guidance, inspiration and for being able to benefit from his vast experience. Without him, this research report would not have been possible.

- My wife, Pam Rajcoomar for her support, encouragement and confidence in my ability to meet the challenges of studying the MBA degree.

- My daughter, Sashrika Rajcoomar (who was 8 years old when I commenced the MBA!) for her patience and understanding when I was unable to be with her due to study commitments.

- Mr Ravin Deonarain, CEO of FoodBev Seta, for his confidence shown in me whilst doing the MBA, for funding my studies and allowing me precious time away from the office to attend lectures and complete my research report whilst holding a demanding job.

TABLE OF CONTENTS

LIST OF TABLES III

LIST OF FIGURES III

1 INTRODUCTION 1

1.1 PURPOSE OF STUDY 2
1.2 CONTEXT OF STUDY 2
1.3 PROBLEM STATEMENT 3
1.3.1 MAIN PROBLEM 3
1.3.2 SUB-PROBLEMS 4
1.4 SIGNIFICANCE OF STUDY 4
1.5 DELIMITATIONS AND LIMITATIONS 5
1.5.1 DELIMITATIONS 5
1.5.2 LIMITATIONS 6
1.6 DEFINITION OF TERMS 7
1.7 ASSUMPTIONS 8

2 LITERATURE REVIEW 10

2.1 INTRODUCTION 10
2.2 THE COMPOSITION OF THE BOARD OF DIRECTORS 10
2.2.1 CATEGORIES OF DIRECTORS OF THE BOARD 11
2.2.2 FUNCTIONS OF THE BOARD 13
2.2.3 CHARACTERISTICS OF A WINNING BOARD 14
2.2.4 BOARD COMPOSITION AND PERFORMANCE 14
2.2.5 CONCLUSION 15
2.3 SIZE OF THE BOARD 15
2.3.1 CONCLUSION 16
2.4 SEPARATION OF DUTIES OF THE CHAIRMAN OF THE BOARD AND THE CHIEF EXECUTIVE OFFICER 17
2.4.1 SPLITTING OF ROLES 18
2.4.2 DUALITY 18
2.4.3 CONCLUSION 20
2.5 CONCLUSION OF LITERATURE REVIEW 20
2.5.1 INDEPENDENCE OF THE BOARD 21
2.5.2 BOARD SIZE 21
2.5.3 SEPARATION OF THE ROLES OF THE CHAIRMAN OF THE BOARD AND THE CHIEF EXECUTIVE OFFICER 21

3 RESEARCH METHODOLOGY 22

3.1 RESEARCH METHODOLOGY /PARADIGM 22
3.2 RESEARCH DESIGN 22

3.3 DEFINITION OF VARIABLES 24
3.4 SUMMARY OF DATA VARIABLES 26
3.5 COMPANY PERFORMANCE 27
3.5.1 PROFITABILITY 27
3.5.2 RETURN ON EQUITY 27
3.5.3 TOBIN'S Q 28
3.5.4 RETURN ON ASSETS 28
3.6 CHOICE OF VARIABLES 29
3.7 REGRESSION EQUATIONS 31
3.8 POPULATION AND SAMPLE 32
3.8.1 POPULATION 32
3.8.2 SAMPLE 32
3.9 DATA COLLECTION 32
3.10 DATA ANALYSIS AND INTERPRETATION 32
3.11 VALIDITY AND RELIABILITY 33
3.11.1 EXTERNAL VALIDITY 33
3.11.2 INTERNAL VALIDITY 33
3.11.3 RELIABILITY 34

4 DATA 35

4.1 BOARD ACTIVITIES 35
4.2 BOARD SIZE 38
4.3 SEPARATION OF THE ROLES OF THE CEO FROM THE CHAIRMAN 39

5 RESULTS AND INTERPRETATION 40

5.1 RESULTS FOR TOBIN'S Q 40
5.2 RESULTS FOR EPS 43
5.3 RESULTS FOR ROA 46
5.4 RESULTS FOR ROE 49

6 CONCLUSION 51

7 SUGGESTIONS FOR FUTURE RESEARCH 54

REFERENCES 55

APPENDIX A 62

LIST OF TABLES

Table 1: Definition and explanation of terms..... 7

Table 2: Summary of data variables..... 26

Table 3: Descriptive Statistics for Board Activities 35

Table 4: Regression Results for Financial Performance (Tobin's Q) 40

Table 5: Regression Results for Financial Performance (EPS) 43

Table 6: Regression Results for Financial Performance (ROA)..... 46

Table 7: Regression Results for Financial Performance (ROE)..... 49

LIST OF FIGURES

Figure 1: Board Composition 36

Figure 2: Percentage of Companies that perform an annual performance assessment of directors 37

Figure 3: Board Size per company (Frequency Table) 38

Figure 4: Percentage Companies that have an Independent Board Chairman.... 39

1 INTRODUCTION

The overriding goal of any corporate enterprise is to consistently generate a competitive return on investments for its shareholders by increasing the value of their investment (Beck *et al* (2003)). The operations and the management of the company are separated from its shareholders (the owners). The board of directors is appointed by the shareholders for the stewardship of the company; hence the goal of increasing the value of investments is left in the hands of the board of directors (King II 2002, paragraph 1.1, page 20).

The goal of corporate governance is to regulate the management practices within a company, enabling corporate management to be more efficient and increase shareholder interests and benefits (Chen, Hsu and Shen (2006)). Establishing sound corporate governance practices can help companies avoid management level corruption and enhance firm value (Chen, Hsu and Shen (2006)). With effect from 1 March 2002 all companies listed on the Johannesburg Securities Exchange had to conform to the requirements of the King II Code of Corporate Governance as required by the JSE Listings Requirements, S8.61(a).

The King II Code of Corporate Governance (2002) is a comprehensive report that covers all aspects of corporate governance. The report is broken down into six sections which cover the board and directors, risk management, internal audit, integrated sustainability reporting, accounting and auditing, and compliance and enforcement of the King II Code of Corporate Governance.

Due to the vastness of corporate governance, this study will focus specifically on the board of directors. The relationship between the board of directors and the financial performance of the company will be investigated. Further research into the correlation between the company's financial performance and the main corporate governance construct; the board composition, board size and the separation of the functions of chairman of the board and the chief executive officer (CEO) will be conducted.

1.1 PURPOSE OF STUDY

The purpose of the research is to investigate the relationship that corporate governance, as it pertains to the board of directors, has with the financial performance of companies in South Africa. Since the dismantling of apartheid in 1994, South African companies have the opportunity of competing in the global marketplace as well as the opportunity of attracting global investors.

As corporate governance covers a wide area, this research will focus particularly on certain aspects of the board of directors such as the composition of the board, board size and the separation of the duties of the CEO and chairman of the board and investigate the relationship that these have with the financial performance of a company.

The board of directors is appointed by and accountable to the shareholders for performance and affairs of the company. Therefore the stewardship of the company and the company's assets and resources rests with the board of directors (King II 2002, paragraph 1.1, page 20).

1.2 CONTEXT OF STUDY

South Africa has been at the forefront of developing corporate governance standards and has implemented the King II Code of Corporate Governance. To date there has been very little research done to link and test the relationship between the board of directors and the financial performance of a company in South Africa.

Enron Corporation, listed on the New York Stock Exchange (NYSE), was one of the world's largest traders in electricity. Dubious management and accounting practices unbeknown to the shareholders led to the demise of this company. With the recent demise of organisations such as Enron and Worldcom, the international community has placed a large emphasis on good corporate governance and a common set of international best practices have emerged (Grant and Motara *(*2006)).

As South Africa competes in the global marketplace, the desire to access foreign capital, wanting to enhance reputation to export globally and the desire to become a multinational company has motivated many companies in South Africa to follow and be committed to global corporate governance best practices (Grant and Motara *(*2006)). In South Africa, with the recent demise and scandals facing Fidentia and the Leisurenet Group, the board of directors are being called more into question.

In this light, this research is being undertaken to investigate the relationship between corporate governance and the financial performance of companies as much research has been done in developed economies and little has been done in South Africa.

Furthermore, much research has been carried out studying the relationship between board structure and company performance by Agrawal and Knoeber (1996), Brickley, Coles and Jarrekk (1997), Hermalin and Weisbach (1991) and Klein (1996) using data obtained from the United States and the United Kingdom which are first world markets. Firer and Swartz (2005), questions whether these results can be applied to South Africa which is an emerging market, where capital flow is limited, markets are less sophisticated and production is mainly labour intensive due to lower cost of labour. Furthermore educational and professional resources are limited (Van Staden (1998)).

1.3 PROBLEM STATEMENT

1.3.1 *Main Problem*

The board of directors (board) is fundamental to the implementation of sound corporate governance, profitability, long term sustainability and the protection of shareholder's interests of a company (Abdullah (2004)). South Africa has been at the forefront in developing corporate governance standards. The purpose of the research is to explore the contributions made by the board in line with the

requirements and recommendations of King II Code of Corporate governance, to the financial performance of a company. The factors examined are the composition of the board, the size of the board and the separation of the functions of the chairman of the board and the CEO and investigate the overall relationship that these aspects have with the financial performance of a company.

1.3.2 *Sub-Problems*

The first sub-problem is to identify the composition of the board, board structure, membership of the board in relation to the recommendations of King II Code of Corporate Governance and investigate the relationship that this has with the financial performance of a company.

The second sub-problem is to establish the size of the board and investigate its relationship with the financial performance of a company.

The third sub-problem is to investigate the relationship between financial performance of a company and the separation of the roles between the chairman of the board and the CEO.

1.4 SIGNIFICANCE OF STUDY

The study will be of value to companies in that it will provide information as to the relationship between the board of directors and its financial performance in tandem with the practice of sound corporate governance. The results of the study will also be a measure for companies who do not subscribe to the King II code to decide on whether to follow the code or let the status quo remain.

This study will also shed light on the impact that the board of directors; complying with the recommendations of King II Code of Corporate Governance have on financial performance of a company against global trends. It will also reveal if the recommendations of King II has in fact added any value in a company adopting those principles.

South Africa is now able to compete in the global marketplace and as a result requires to access foreign capital. South African companies need to enhance their reputation to export globally in their effort to become multinational companies. The results can also be used by international investors in their investment decisions (Grant and Motara (2006)).

South Africa faces a skills shortage of directors. Should the results of the study be positive, then this can be used by government in drafting legislation to address the problem of the skills shortage of directors. In particular, the Sector Education and Training Authorities will be able to set funds aside for the training and development of directors together with addressing the Employment Equity issues facing companies.

1.5 DELIMITATIONS AND LIMITATIONS

1.5.1 *Delimitations*

a. The study will be limited to companies listed on the JSE.
b. A cross section of companies across various sectors will be investigated.
c. Financial data for the last 5 years will be considered for the period 2001 to 2006.
d. The implementation of King II Code of Corporate Governance will be investigated as a primary requirement.
e. The study will also be limited to the relationship that the board of directors have on financial performance.
f. The other elements of corporate governance as prescribed by King II are important but will not be included in this research.

1.5.2 *Limitations*

a) Only a small part of the entire corporate governance recommendations will be researched, limited to three aspects that relate to the board of directors, namely; board size, independence of directors and duality of the Chairman of the Board and CEO.

b) Other studies have been undertaken and have found that, amongst others, the three above mentioned aspects as well as the prevailing economic conditions, business cycles and change in top management, affect company performance.

1.6 DEFINITION OF TERMS

Table 1: Definition and explanation of terms

Term	Meaning	Reference
Corporate Governance	"The ways in which suppliers of finance to corporations assure themselves of getting a return on their investments."	Shleifer and Vishny (1997)
King II	Code of corporate governance adopted by SA companies with effect from April 2002	King II (2002)
Board	The board of directors charged with corporate governance.	King II (2002)
CEO	Chief Executive Officer	King II (2002)
Financial Performance Indicators	• Tobin's Q • Earnings per Share • Return on Equity • Return on Assets	Chung & Pruitt (1994) Dyl (1998) & Tosi & Gomez-Mejia (1994) for (EPS,ROE,ROA)

1.7 ASSUMPTIONS

The following assumptions will be made in this study:

a. The financial data listed in the annual reports of companies will be deemed correct as these calculations will have been audited by independent auditors. If incorrect financial data is represented on the Annual Financial Statements then an incorrect finding can be made which will negatively impact this study.

b. The share prices will not have been affected by insider trading. One of the measures of financial performance is the share price performance and if these prices are tainted by insider trading then incorrect findings will be made. Furthermore the Insider Trading Act and the disclosure in the Annual Financial Statements will assure the reader that no such malpractices have arisen in the period under review.

c. The information regarding the compliance to King II disclosed in the Annual Financial Statements is correct at the time of publication. The section that contains the disclosure in respect of King II is not generally audited by the independent auditors hence an opinion as to the fairness of presentation is not expressed. Should incorrect information be disclosed then this would be misleading and distort the findings of this research.

d. Directors are sufficiently experienced and qualified to perform their tasks and undertake their responsibilities.

e. The strategic decisions made by the directors will have taken into consideration the prevailing economic climate and business cycles. Hence the decisions taken would have been in the best interests of the shareholders.

f. The study uses data extracted from the Deutsche Securities Report 2006 conducted by research analysts Grant and Motara (2006), of Deutsche Securities (Pty) Ltd. The study has a unique database which is not readily available to the public and is one of the most comprehensive databases on corporate governance in South Africa. There could be other databases available but we are not aware of these.

2 LITERATURE REVIEW

2.1 Introduction

One of the important elements of corporate governance is the structure of the board (King II 2002, paragraph 2.1.1, page 21). A board of directors may be regarded as a team of individuals with the fiduciary responsibilities of leading and directing a firm, with the primary objective of protecting the firm's shareholders' interests (Abdullah (2004)). The role of the board is to monitor the performance of the company so that the interests of the shareholders are protected (Kosnik (1987)). If the board performs its duties effectively, the value of the firm is likely to increase and the wealth of the shareholders will therefore be enhanced (Firer and Swartz (2005)).

When considering the impact that the board has on financial performance, Jensen (1993) states that there is an implicit relationship between the board of directors and firm performance, specifically he argues that the board at the apex of internal control has the final responsibility for the functioning of the firm.

The following topics will be reviewed from the literature:

- Board of Directors composition
- Size of the Board
- Separation of the duties of the chairman of the Board and the Chief Executive Officer

2.2 The Composition of the Board of Directors

King II 2002, paragraph 2.1.2, page 21, stipulates that a unitary board is the preferable model for SA companies. A unitary model is one where the executive and non-executive directors work together in one forum, in contrast to an executive board, subject to the oversight of a second, non-executive supervisory

board. Companies should be headed up by an effective board that can lead and control the company and the board should contain a balance of executive and non-executive directors, preferably with a majority of non-executive directors, of whom a sufficient number should be independent of management so that shareholders' interests (including minority interests) can be protected (King II 2002, paragraph 2.2.1, page 23). King II 2002, paragraph 2.1.18, page 23 states that the board should be in a position to monitor and control the company's business, ensuring a balance between the promotion of an entrepreneurial approach by, and the need to ensure effective control over management.

2.2.1 *Categories of Directors of the Board*

Executive Director

An executive director is an individual who sits on the board and who is involved in the day-to day management and/or is in the full time salaried employment of the company and/or any of its subsidiaries (King II 2002, paragraph 2.4.3, page 24). Executive directors are actively involved in implementing decisions taken by the board for the company's successful operation (Beck *et al* (2003)).

Non-executive Director

A non-executive director is an individual who sits on the board and who is not involved in the day-to-day management and is not a full time salaried employee of the company or its subsidiaries (King II 2002, paragraph 2.4.3, page 24). An individual in the full time employment of the holding company or of its subsidiaries, other than the company concerned could also be considered a non-executive director unless such individual by his/her conduct or executive authority could be construed to be directing the day-to-day management of the company and its subsidiaries (Beck *et al* (2003)).

Independent Non-executive Director (King II 2002, paragraph 2.4.3, page 24)

An independent director is a non-executive director who:

- is not a representative of a shareholder who has the ability to control or significantly control management;
- has not been employed by the company, or a group of which it forms part, in any executive capacity for the three preceding financial years;
- is not a member of the immediate family of an individual who is, or has been in any of the past three financial years, employed by the company or the group in an executive capacity;
- is not a professional advisor to the company or the group, other than in a director capacity;
- is not a significant supplier to, or customer of the company or group;
- has no significant contractual relationship with the company or group; and
- is free from any business or other relationship, which could be seen to materially interfere with the individual's capacity to act in an independent manner.

Shadow Director (King II 2002, paragraph 2.4.4, page 25)

A shadow director is an individual in accordance with whose directions or instructions (whether they extend over the whole or part of the activities of the company) the directors of the company are accustomed to act. Shadow directors should be discouraged.

Alternate Director

A director may appoint an alternate director to represent them in their absence from board meetings. Alternate directors derive their power and authority from the appointing director. The law regards alternate directors as full directors, enjoying

the same powers and authorities and subject to the same rights and responsibilities as the appointing director which is also governed by the company's articles of association (Beck *et al* (2003)).

2.2.2 *Functions of the Board*

Chanduru (2000) suggests the following seven key functions of a board of directors:

1. formulating short-term and long-term strategic direction of the company;
2. making policies for the company to follow;
3. taking responsibility for appointing the CEO and providing guidance on the appointment of other senior executives;
4. monitoring and supervising the performance of executive management to ensure adherence to policy and strategy and high standards of ethical discipline;
5. ensuring that the company has adequate operational and financial systems of internal controls, that planning and budgeting processes are in place as checks on information flows between the company and the board;
6. providing accountability by prompt and sufficiently detailed reporting to shareholders and other stakeholders; and
7. ensuring that the company adheres to relevant statutes and complies with other reporting requirements.

It can be seen from the above that the functions of the board are wide and diverse and the board members have to ensure that the business thrives with enterprise and innovation (Ahwireng-Obeng, Mariano and Viedge (2005)).

2.2.3 *Characteristics of a winning Board*

Colin Coulson-Thomas (2005) has identified the following characteristics of a winning board:

1. Winning boards display the will to win and are driven to succeed, they have a good understanding of what is happening in the marketplace and in their environment; they anticipate events and confront reality and take a long term view and provide strategic leadership.

2. The directors of a winning board assume personal and collective accountability for their actions; they understand the distinction between direction and management and are aware of their directorial duties and responsibilities.

3. Winning boards concentrate on the external, strategic and business development aspects of corporate governance. They strive to benefit shareholders by delivering additional value to customers and they provide and communicate a clear direction, a distinctive vision, a compelling purpose, achievable goals and measurable objectives.

4. Winners focus on the critical success factors for competing and winning. These include developing additional income streams, new capabilities and fresh intellectual capital. They invest in director development and the professional selection, appointment and induction of new directors. Their chairman consciously strives to build effective boards of directors.

2.2.4 *Board composition and performance*

Board composition involves the mix of inside directors (those employed by the company in other capacities) and outside directors (Baysinger and Butler (1985)). Greater outsider representation is often advocated since outside directors are likely to be more objective in monitoring management actions than inside directors (Beatty and Zajac (1994), Fama and Jensen (1993a,b), Gibbs (1993), Johnson,

Hoskisson and Hitt (1993), Pearce and Zahra (1992), Schellenger, Wood and Tashakori (1989)).

In a New Zealand study, Mak and Rosuch (2000) found that the proportion of outside directors is positively related to growth opportunities in a firm and there is a strong relationship between growth and board characteristics. Fubara, Stimpert and Wagner (1998) found that in boards with a higher percentage of outside directors, a higher return indicated by return on assets was obtained. Ezzamel and Watson (1993) found outside directors were positively associated with profitability among a sample of UK firms. In a sample of 266 US firms, Baysinger and Butler (1985) found that firms with more outside directors realized higher return on equity. Schellenger, Wood and Tashakori (1989) observe a direct relationship between outside director representation on the board and corporate financial performance.

2.2.5 *Conclusion*

The literature review relating to this section has given rise to the following proposition:

Proposition 1: The independence of the board **will have no impact on financial performance**

2.3 Size of the Board

Dalton *et al* (1998) and Pearce and Zahra (1992) predict board size to have a positive association with firm performance. Proponents of this view argue that a larger board will have representation of people with diverse backgrounds, who bring knowledge and skills and intellect to the board and thus improve the quality of strategic decisions. Size is thus assumed to be associated with the breadth of perspectives in the planning process and board size is also found to be related to strategic change in the firm (Dwivedi and Jain (2005)). From this perspective,

smaller boards are assumed to have inadequate capacity to initiate strategic change, a lack of clear understanding of alternatives, and/or lack of confidence in recommending strategic change (Goilden and Zajac (2002)).

Lipton and Lorsch (1992) suggest larger boards have an increased capacity for monitoring management, but are slower in making decisions. Jensen (1993) posits boards with eight or fewer directors are more effective in monitoring the chief executive officer.

More recent studies question the theory that smaller boards are more effective. For instance, Ferris, Jagannathan, and Pritchard (2003) find a positive relation between board size and the ratio of market assets to book assets for a large and diverse sample of firms. Helland and Sykuta (2005) reports that firms with smaller boards are significantly more likely to be the targets of stockholder litigation, suggesting that larger boards can be more effective monitors.

Additional studies argue that board composition and board size are selected to maximise the value of the firm and optimal board characteristics can vary from firm to firm. Beiner, Drobetz, Schmid and Zimmermann (2004) suggest that the optimal board size could vary based on firm size, board independence, leverage, firm performance and firm ownership.

Rechner (1989) argued that the ideal corporate governance structure is one in which the board is composed of a majority of outside directors and a chairman who is an outside director. Rechner (1989) further states that the weakest corporate governance is one where the board is dominated by insider directors and the CEO holds the chairmanship of the board.

2.3.1 *Conclusion*

The literature review relating to this section has given rise to the following proposition:

Proposition 2: **The size of the board has no impact on the financial performance of the company.**

2.4 Separation of duties of the Chairman of the Board and the Chief Executive Officer

The separation of ownership from management and the continued growth of the capital needs of companies have necessitated a need for a change in the role of the chief executive officer. An increased size and complexity of the company has also led to the need for a more sophisticated and professional manager (Allan and Widman (2000)). These changes have prompted a change in the relationship between owners and the managers.

“Until the period between the two World Wars, today’s largest corporations typically had neither a chairman nor a chief executive officer, but one person whose only title was that of president. Between 1910 to 1935 the title of chief executive officer was probably first granted to establish the president’s increasing powering in a period when that was crucial to organizational growth. Many presidents fought to establish primacy over their senior managers. In addition, presidents often had to raise outside money to finance growth, without ceding control to financial suppliers. Following World War II, the titles of chairman and CEO were frequently combined in one person, possibly in recognition of the extremely strong position of the CEO. That remains the dominant practice in the United States today in large, public corporations. What it now means to be chief executive, while somewhat unsettled, is much clearer that what it means to be chairman, and the title of CEO connotes considerable power, while that of a chairman does not” (Levy (2003)).

Daynton (1994) asserts that the board is the primary force pushing the company towards the company realising the opportunities and meeting the obligations to the shareholders and stakeholders, and he argues that the CEO is the one who enables the board to play a primary force.

2.4.1 *Splitting of Roles*

The case for the splitting of roles of the CEO and chairman was made by Lorsch and Maclver (1989) who argued that 80% of US Boardrooms the CEO has great power primarily because of his or her expertise in the knowledge of company matters. In addition since the CEO determines what information directors receive they see the company through the eyes of the CEO. Also the CEO controls the agenda and plays an important role in the selection of outside directors. All these factors impede the outside directors from exercising their power. In most cases these outside directors are themselves CEO's of other companies and become reluctant to criticize fellow CEOs. Some of the director's concerns about the company may not be communicated to one another until it threatens the survival of the company. For these reasons Lorsch and Maclver propose that the roles of the CEO and chairman be split. Both Cadbury (1992) and Hampel (1992) also recommend that the posts of the chairman and CEO be split.

When one person dominates a firm, the role of the independent directors become "hypothetical' (Rechner (1989) and Daynton (1984)), Rechner (1989, page 14) claimed, "…this structure is likely to function as a rubber stamp board given the total control of the CEO." Miller (1997) also argues that a non-executive chairman promotes a higher level of corporate openness.

2.4.2 *Duality*

Duality occurs when one individual holds the most two powerful posts on the board of directors, namely those of CEO and chairman (Laing and Weir (2001)). The CEO is a full time position and is charged with the responsibility for the daily running of the organisation, together with setting and implementing corporate strategy and being responsible for the performance of the company (Laing and Weir (2001)).

In contrast the post of the chairman of the board is part time and the chairman is responsible to ensure that the board functions effectively. This involves monitoring and evaluating the performance of the executive directors and the CEO (Laing

and Weir (2001)). According to the Cadbury Report (1992), the chairman has the responsibility to look after boardroom affairs such as ensuring that all non-executive directors have the relevant information for board meetings and other pertinent information. Cadbury also suggested that the chairman be divorced from the day to day running of the company operations and that independent non-executive chairman are more likely to provide objective opinions on proposals, be more effective decision monitors and be more likely to promote shareholders interests.

Daily and Dalton (1993) state that duality is often a sign of strong CEO power which combined with a lack of monitoring of board decisions, may have negative consequences for corporate performance. This view was also supported by Rechner and Dalton (1991). Further evidence about the potential problems associated with duality is found in relation to corporate decline, where duality is frequently cited as an important factor that influences the downward spiral of companies (Argenti (1976), Slatter and Lovett (1999)).

King II 2002, paragraph 2.3, page 23 states that should be a clearly accepted division of responsibilities at the head of the company, to ensure a balance of power and authority, such that no one individual has unfettered powers of decision making. The chairperson should preferably be an independent non-executive director. Given the strategic operational role of the chief executive officer, this function should be separate from that of the chairman. King II 2002 further states that where the role of the chairperson and the chief executive officer are combined, there should be either an independent non-executive director serving as a deputy chairperson or a strong non-executive director element on the board. Any decision to combine roles should be justified each year in the company's annual report.

This view is strongly supported by Fonteyn (2002) in suggesting that it is the chairperson's duty to enforce honesty and integrity and to demonstrate intellectual independence and if the roles of the chairperson and chief executive officer are combined, there should be an annual justification.

According to Jensen (1993), there is an implicit relationship between boards of directors and firm performance. Specifically he argues that the “board at the apex of internal control system, has the final responsibility for the functioning of the firm”. When the board chairman is also the CEO, the board intensity to monitor and oversee management is reduced as a result of the lack of independence and conflict of interest (Lorsch and MacIver (1989)).

2.4.3 *Conclusion*

The literature review relating to this section has given rise to the following proposition:

Proposition 3: The separation of the roles of the chairman of the board and the chief executive officer is not effective or has no influence in enhancing financial performance of the company.

2.5 Conclusion of Literature Review

The board of directors is charged with the responsibility of protecting and promoting the interests of the shareholders and the monitoring effectiveness of the board is typically viewed as a function of its independence, size and structure. They would make decisions consistent with shareholder wealth maximisation which will impact financial performance and has thus led to the three propositions that will be tested:

We now state the propositions more formally:

2.5.1 *Independence of the board*

Proposition 1: The independence of the board will have no impact on financial performance

2.5.2 *Board Size*

Proposition 2: The size of the board has no impact on the financial performance of the company.

2.5.3 *Separation of the roles of the chairman of the board and the chief executive officer*

Proposition 3: The separation of the roles of the chairman of the board and the chief executive officer is not effective or has no influence in enhancing financial performance of the company.

3 RESEARCH METHODOLOGY

Quantitative research involves the collection of fact (or data) and studying the relationship (if any) of one set of facts (or data) to another (Bell (2005)). In this investigative research the methodology followed will be to undertake a quantitative analysis of the various propositions as discussed in the literature review.

This will involve the collection of data/facts that are available and a subsequent analysis and synthesis of the data to provide meaningful evidence in support (favourable or unfavourable) of the propositions.

3.1 Research methodology /paradigm

The propositions developed in the literature review chapter lend itself to conducting a quantitative research. The variables, discussed in section 3.2 that will be used to test the propositions listed in section 3.2 are numerical as meaningful arithmetic can be performed on it (Albright, Winston and Zappe (2006)). Some of the variables could be categorical as a YES answer could be allocated a value of 1 and a NO answer could be allocated a value of 0 (Albright, Winston and Zappe (2006)).

It will also include discrete numerical variables as it is possible for the values to be counted (Albright, Winston and Zappe (2006)).

3.2 Research Design

Data will be gathered from the research conducted by Grant and Motara (2006) as contained in the Deutsche Securities Report 2006 to investigate the propositions as follows:

Proposition 1: The independence of the board will have no impact on financial performance.

The following data will be used to substantiate the independence of the board:

- The number of board members comprising the board;
- The percentage of independent directors as a percentage of the total number of directors;
- The number of board meetings held in the last financial year;
- The number of directors that missed over 25% of the meetings; and
- The annual performance assessment of the board.

Proposition 2: The size of the board has no impact on the financial performance of the company.

The following data will be used to test the size of the board and the impact that this has on financial performance:

- The number of board members comprising the board;
- The percentage of independent directors as a percentage of the total number of directors.

Proposition 3: The separation of the roles of the chairperson of the board and the chief executive office is effective in enhancing financial performance of the company.

The following data will be used:

- Is there an Independent Chairman, independent of the CEO?

3.3 Definition of variables

Grant and Motara (2006) define independence as follows:

Director Independence:

- Chairman and CEO are individuals and positions as of the most recent annual general meeting;
- Independent Chairman is as of the most recent annual shareholders' meeting, whether the Chairman of the Board meets all of the requirements of independence as detailed below;
- Number of board members is the number of members serving on the board of directors as of the most recent annual shareholders' meeting; and
- Number of independent directors is the number of members currently serving on the board of directors meeting all the requirements of independence as listed below.

Definition of independence:

An independent director is one who:

- Has not held an executive position within the company group;
- Has not has an association with the company of more than nine years;
- Is not related through blood, marriage or equivalent to other directors or advisors to the company;
- Has not been appointed other than through an appropriately constituted nomination committee or equivalent independent process;
- Is not or has not recently been employed by, a partner in or on the board of a professional advisor to the company;

- Does not have the status of an employee, hold share options or other conditional share awards, receive remuneration other than fees, receive consultancy payments or have eligibility for pension benefits or participate in bonus schemes;

- Does not receive remuneration from a third party in relationship to the directorship;

- Does not benefit from related party transactions during the year;

- Does not have common or cross directorships or significant links with other directors through involvement in other companies or bodies;

- Does not currently hold or has recently held a senior position with a political or charitable body to which the company makes contributions in cash, in kind or through sponsorships, etc;

- Does not hold a Notifiable Holding themselves or serve as a director or employee of another company which has a Notifiable Holding in the company;

- Does not serve as a director or employee of a company in which the company has a Notifiable Holding, thereby facing potentially conflicting fiduciary duties;

- Is not or has not recently been employed by or on the board of a significant customer or supplier to the company;

- Does not act as the appointee or representative of a stakeholder group other than the shareholders as whole; and

- Does not serve as a director or employee of a significant competitor of the company.

3.4 Summary of data variables

The table below summaries the data variables:

Table 2: Summary of data variables

Variable	**Data Type**
Total no. of board members	Numeric
% of independent Board Members as a % of Total no. of board members	Numeric
Total no. of meetings held in last financial year	Numeric
Percentage of directors who missed at least 25% of meetings	Numeric
Independent Chairman of Board, independent of the CEO	Categorical Yes = 1, No = 0
Annual Performance assessment of directors	Categorical Yes = 1, No = 0

3.5 Company Performance

The typical measures of financial performance are share performance, profitability and shareholders equity (Dyl (1998) & Tosi and Gomez-Mejia (1994)). The financial measures; earnings per share, return on equity, return on assets and Tobin's Q will be used in this research.

3.5.1 *Profitability*

This is measured as the earnings per share (EPS). EPS is equal to reported net income divided by the average total fully diluted shares outstanding (Grant and Motara (2006)). The use of this measure, as a measure of company performance is criticized as it may not reflect a firm's true underlying value of performance because executives can manipulate indicators to make themselves look good (Gomez-Mejia, Tosi and Hinkin (1987)). Practices include, manipulation of depreciation policy, inventory valuation procedures (FIFO vs. LIFO), using short term non-capitalised leases to obtain productive equipment and using window dressing techniques such as holding borrowed money at year end to make the balance sheet look good (Gomez-Mejia, Tosi and Hinkin (1987)).

3.5.2 *Return on Equity*

Return on equity (ROE) is often used as a measure of company performance as it is a better measure because it considers profit rates rather than profit size (Madura, Martin and Lessi (1996)). Grant & Motara (2006) defines ROE as the net income divided by average majority equity.

3.5.3 *Tobin's Q*

Tobin's Q (q) is defined as the ratio of the market value of a firm to the replacement cost of its assets. Chung and Pruitt (1994) suggest the following formula in the computation of Tobin's Q:

Approximate q = (MVE + PS + DEBT) / TA

Where:

MVE = the product of a firm's share price and the number of common stock shares outstanding;

PS = liquidating value of the firm's outstanding preferred stock,

DEBT = book value of the firm's debt;

TA = the book value of the total assets of the firm.

This formula is used as the required inputs are readily available from the firm's basic financial and accounting information.

3.5.4 *Return on Assets*

Grant and Motara (2006) define Return on Assets (ROA) as net income divided by average total assets.

3.6 Choice of variables

This section motivates the use of the variables to test the three propositions.

1. **Number of independent board members**

   Having an independent board of directors is imperative for good corporate governance as required by King II Code of Corporate Governance. The criteria for ascertaining whether a director is independent are embedded in the data gathered in the research conducted by Grant and Motara (2006). Following form the literature review, using the number of independent board members as a percentage of the total number of board members is important in testing proposition 1.

2. **Total number of meetings held in the last financial year**

   Important decisions that steer the strategy and operations of a company are usually taken at board meetings. The company's articles of association also stipulate that a meeting should be held at least once every quarter. Including this variable will indicate compliance with the articles of association and the impact that directors make on guiding the strategy of the company in the quest of shareholder wealth maximisation.

3. **Percentage of Directors who missed over 25% of meetings**

   A director has a fiduciary responsibility in taking decisions to optimise the performance of a company. This would entail being present at each board meeting. Having missed over 25% of meetings will indicate the director's commitment towards the company in discharging his/hers fiduciary responsibilities. Good corporate governance will require a director to be

present at all meetings. Including this variable contributes to an independent director contributing to a company's financial performance.

4. Annual performance assessment of directors

When one's performance is examined there is a continuous effort to improve year on year. A director's annual performance assessment is important in evaluating the performance of that director. A conscientious director will strive for continual improvement which in turn will have a positive impact on the performance of the company. This variable will be useful in testing if the annual performance assessment has an impact on the company's financial performance coupled with the independence of the director.

5. Total number of board members

The literature review contained in chapter 2, discusses at length the impact the size of a board makes on the financial performance of the company. It is therefore imperative to include this variable to test proposition 2.

6. Independent chairman of board, independent of the CEO

The literature review contained in chapter 2, discusses at length the impact the independence and duality of the chairman of the board and CEO has on the performance of the company. King II Code of Corporate Governance requires that duties of the chairman of the board be separated from that of the CEO. It is therefore critical to include this variable to test proposition 3.

3.7 Regression Equations

The equations to be estimated are as follows:

(1) Tobin's Q = $\alpha + \beta_1.TBM + \beta_2.IBM + \beta_3.TM + \beta_4.MM + \beta_5.IBC + \beta_6.APA + e_1$

(2) ROE = $\alpha + \beta_1.TBM + \beta_2.IBM + \beta_3.TM + \beta_4.MM + \beta_5.IBC + \beta_6.APA + e_2$

(3) EPS = $\alpha + \beta_1.TBM + \beta_2.IBM + \beta_3.TM + \beta_4.MM + \beta_5.IBC + \beta_6.APA + e_3$

(4) ROA = $\alpha + \beta_1.TBM + \beta_2.IBM + \beta_3.TM + \beta_4.MM + \beta_5.IBC + \beta_6.APA + e_4$

Where:

Q = Tobin's Q as explained above

ROE = Return on Equity

EPS = Earnings per Share

ROA = Return on Assets

TBM = Total number of Board Members

IBM = % of Independent Board Members as a % of Total no. of board members

TM = Total number of meetings held in last financial year

MM = % of Directors who missed over 25% of meetings

IBC = Independent Chairman of board, independent of CEO

APA = Annual Performance Assessment of Directors

ei = Error Term

3.8 Population and sample

3.8.1 *Population*

The population for the research is all companies listed on the Johannesburg Securities Exchange (JSE) Limited in 2006.

3.8.2 *Sample*

A sample of 46 companies listed on the Johannesburg Securities Exchange Limited will be selected. These will represent the industrial, resources and financial sectors. The companies enjoying a large market capitalisation will be selected as these companies have been found to be compliant to the King II Code of Corporate Governance.

3.9 Data collection

The data that will be used for the research will be that of the research conducted by Grant and Motara (2006) that is contained in the report, Beyond the Numbers, Corporate Governance in South Africa published by Deutsche Securities (Pty) Ltd in 2006.

3.10 Data analysis and interpretation

The data analysis methods that will be used for each proposition is included in the consistency matrix below.

Data will be analysed and be reported in the form of bar graphs and line charts. Certain of the variables lend themselves to be reported using the calculation of means, variance and standard deviation.

Correlation analysis will also be used as a correlation analysis measures the strength of an association or relationship between two variables, the independent variable and the dependent variable (Lind, Mason and Marchal (2001)).

Regression analysis will also be used as regression analysis is a study of the relationship between variables (Albright, Winston and Zappe (2006)).

3.11 Validity and reliability

According to Leedy and Omrod (2001), the validity of the research project refers to the “accuracy, meaningfulness and credibility” of the study as a whole.

3.11.1 *External validity*

External validity refers to the extent to which generalisations into other areas can be made from the results of a specific study (Leedy and Omrod (2001)). This can be improved by selecting a sample representative of the population. This will be done from drawing a sample across the sectors of the economy in South Africa.

The results of the findings can be applied to companies operating in South Africa as it is classified as an emerging market and attempts to use these results to draw similar conclusions in first world and developing countries will be incorrect (Grant and Motara (2006)).

3.11.2 *Internal validity*

Internal validity refers to the extent to which accurate conclusions can be drawn from the study (Leedy and Omrod (2001)). This would entail reducing the possibility that the research results have arisen due to reasons other than that concluded in the study.

To overcome this problem, only the relevant data will be gathered from the research done by Grant and Motara (2006).

3.11.3 *Reliability*

Reliability refers to the consistency of results within a study (Leedy and Omrod (2001)).

The Companies Act, Act No.61 of 1973, requires the annual financial statements of a company to be audited annually by an independent auditor before the annual financial statements can be published. This ensures that the data gathered will have the stamp of the auditor for reliability, therefore producing consistent results.

4 DATA

This chapter presents the data characteristics from the sample of 46 companies listed on the JSE in 2006. The detailed data is contained in Table A in Appendix A.

4.1 Board Activities

Descriptive statistics for board activities for a sample of 46 firms listed on the JSE in 2006 are presented below:

Table 3: Descriptive Statistics for Board Activities

Variable	Mean	Median	Minimum	Maximum
TBM	14	13	5	24
IBM	35%	36%	0%	62%
TM	6	5	4	10
MM	18%	17%	0%	80%

Legend

TBM = Total number of Board Members

IBM = % of Independent Directors as a % of total board members

TM = Total number of meetings held in last financial year

MM = % of Directors who missed over 25% of meetings

The average number of board members is 14 with a minimum number of 5 and a maximum of 24 members. A median of 13, number of board members is observed. The average composition of independent directors on the board is 35% with some boards having zero independent directors whilst some boards had a maximum of 62% of independent directors.

The average number of board meetings held during the financial year is 6. All companies held a board meeting at least once every quarter whilst some held a maximum of 10 meetings for the year. An average of 18% of directors missed at least 25% percent of the meetings held during the year. The minimum number of meetings missed is zero whilst a maximum of 80% for non attendance of 25% of meetings is observed.

Figure 1 below shows the composition of the board in terms of the percentage composition of independent directors and the percentage composition of non-independent directors. Of the sample of 46 companies, the board comprised an average of 35% of independent directors as defined in terms of independence. The balance of the board (65%) comprised non-independent directors.

Figure 1: Board Composition

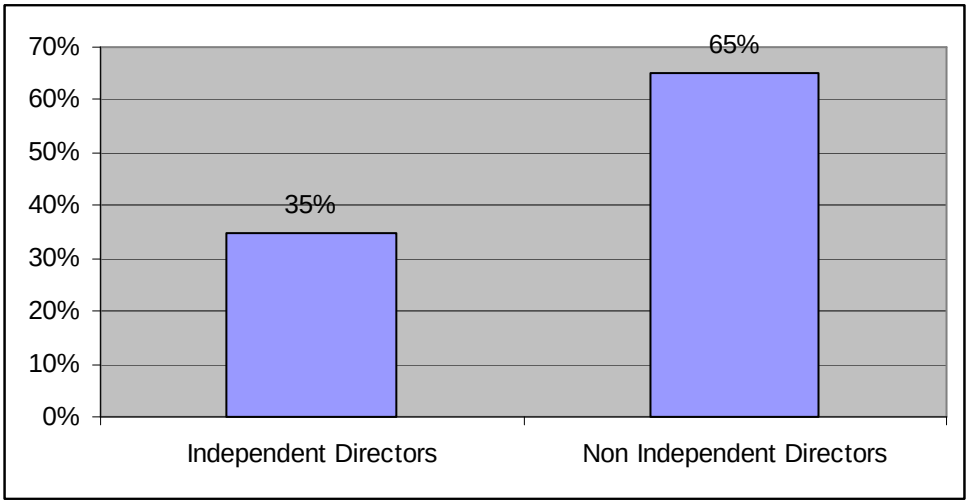
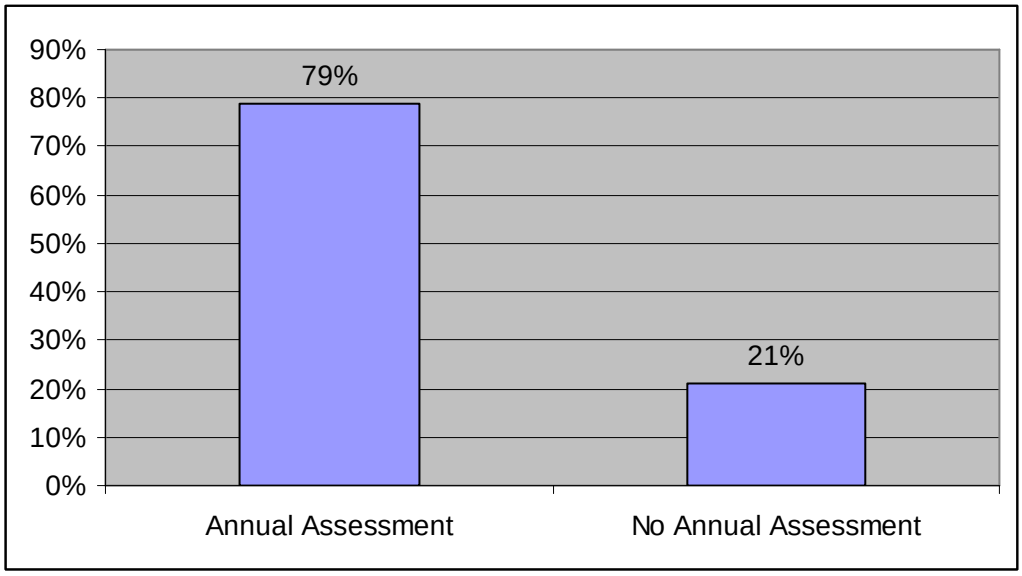


Figure 2 indicates that of the sample of 46 companies, 79% (37) companies carried out an annual performance assessment of the directors and 21% (9) companies did not carry out an annual performance assessment of its directors. It would seem that the practice of performing annual assessments is being practised by many companies as part of the monitoring and evaluation of director performance.

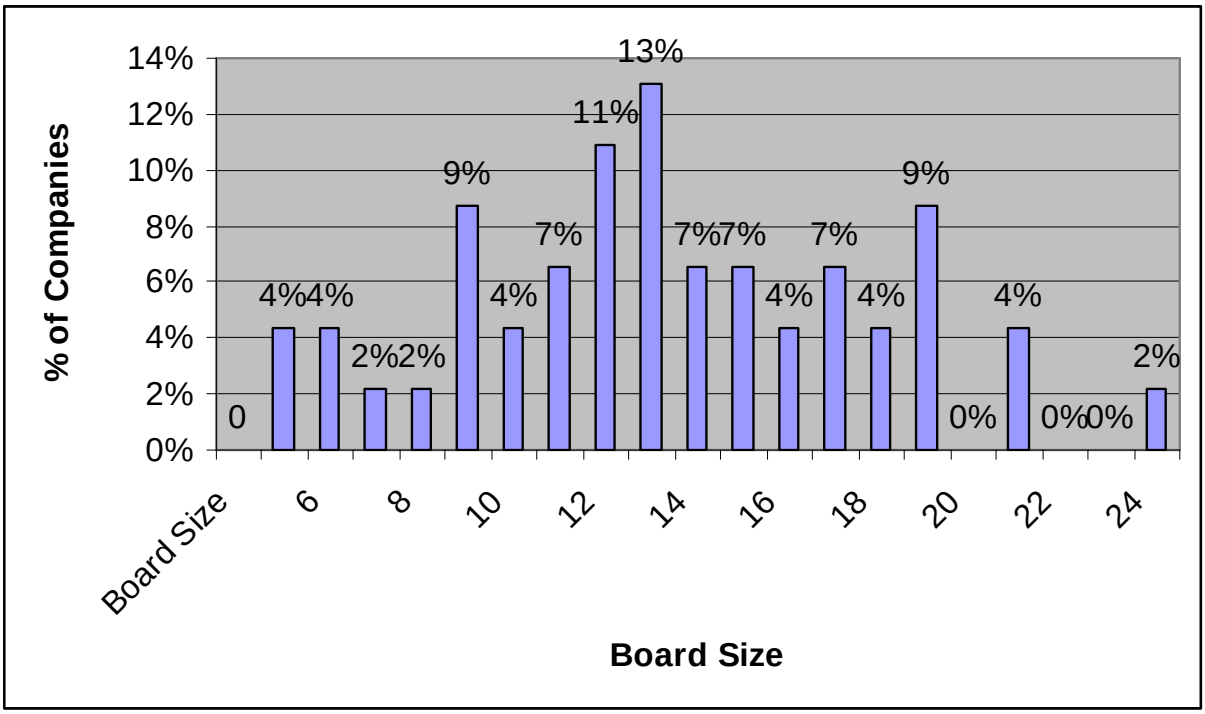
Figure 2: Percentage of Companies that perform an annual performance assessment of directors



4.2 Board Size

Figure 3 represents the size of the board in relation to the percentage of companies sampled. 13% of the companies had a board size of 13 directors whilst 4% of the companies have a board size of 5 directors at a minimum. 2% of the companies operated with a board of 24 directors. The mean number of directors is 14 and 50% of companies operate with a board of between 11 and 13 directors.

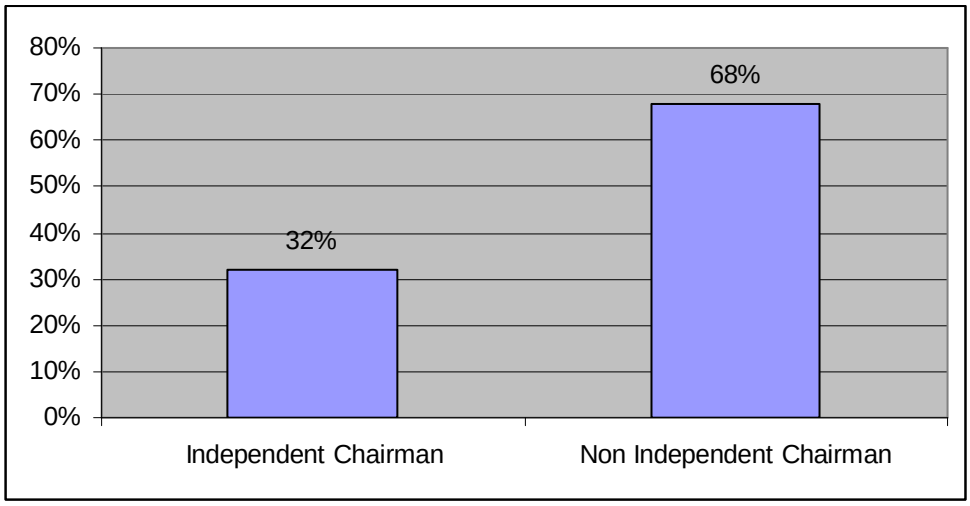
Figure 3: Board Size per company (Frequency Table)



4.3 Separation of the roles of the CEO from the Chairman

Figure 4 below reflects that 32% (15) of the companies had an independent board chairman as defined by the independence criteria and 68% (31) did not have an independent board chairman. It is important to note that in the sample of 46 companies the position of the CEO and Chairman of the board was held by separate persons.

Figure 4: Percentage Companies that have an Independent Board Chairman



5 RESULTS AND INTERPRETATION

5.1 Results for Tobin's Q

We estimated the regression equation of Tobin's Q in relation to the variables; total number of board members, % of independent board members as a % of total board members, % of directors who missed more than 25% of meetings, Independent Chairman of board, independent of CEO and annual performance assessment of directors. This regression equation (1) is referenced to in Chapter 3.7. The regression equation relates to proposition 1 which is testing the independence of the board will have no impact on the financial performance of a company (Tobin's Q).

Table 4 presents the regression results for Tobin's Q as a measure of financial performance.

Table 4: Regression Results for Financial Performance (Tobin's Q)

	Co-efficient	**Std.Error**	**t-value**	**p-value**	**Lower Limit**	**Upper Limit**
Constant (α)	-17.5002	69.4652	-0.2519	0.8024	-158.0068	123.0064
TBM	-2.0864	2.6198	-0.7964	0.4306	-7.3853	3.2125
IBM	85.7885	74.7178	1.1482	0.2579	-65.3426	236.9196
TM	8.6222	7.8958	1.0920	0.2815	-7.3486	24.5930
MM	-60.1133	71.9348	-0.8357	0.4084	-205.6152	85.3886
IBC	-9.7386	27.3066	-0.3566	0.7233	-64.9715	45.4943
APA	3.5983	32.7583	0.1098	0.9131	-62.6616	69.8581

Multiple R = 0.3321 R-Square = 0.1103 p-Value = 0.5715

Legend

TBM = Total number of Board Members

IBM = % of Independent Directors as a % of total board members

TM = Total number of meetings held in last financial year

MM = % of Directors who missed over 25% of meetings

IBC = Independent Chairman of board, independent of CEO

APA = Annual Performance Assessment of Directors

The independent variables with a t-value greater than 1.96 or a p-value less than 10% will be regarded as having a significant statistical relationship with the dependent variable (Tobin's Q).

These results show that the variables do not have a significant relationship with Tobin's Q as their t-values and p-values lies outside of the acceptable limit in order to conclude whether a significant relationship exists. This indicates that these variables have a weak relationship with Tobin's Q.

The findings are not consistent with the view of Jensen (1993) where he states that there is an implicit relationship between the board of directors and a firm's financial performance as in the results above, the board has no positive influence over the financial performance of a company as measured by Tobin's Q.

The recommendation made by King II 2002, paragraph 2.2.1 is not well supported by the results above, as King II 2002 requires that companies should be headed up by an effective board and the board should contain a balance of executive and non-executive directors, preferably with a majority of non-executive directors.

It can be seen from the results above that the financial performance of a company as measured by Tobin's Q is not related to the composition of the board in terms of the number of independent directors.

5.2 Results for EPS

We estimated the regression equation of EPS in relation to the variables; total number of board members, % of independent board members as a % of total board members, % of directors who missed over 25% of meetings, Independent Chairman of board, independent of CEO and annual performance assessment of directors. This regression equation (3) is referenced to in Chapter 3.7. The regression equation relates to proposition 2 which is testing the impact of board size on financial performance (EPS).

Table 5 presents the regression results for EPS as a measure of financial performance.

Table 5: Regression Results for Financial Performance (EPS)

	Co-efficient	**Std.Error**	**t-value**	**p-value**	**Lower Limit**	**Upper Limit**
Constant (α)	-1.8887	7.3689	-0.2563	0.7991	-16.7932	13.0159
TBM	0.7206	0.2779	**2.5930**	**0.0133**	0.1585	1.2827
IBM	-4.2110	7.9259	-0.5313	0.5982	-20.2426	11.8206
TM	-0.6373	0.8376	-0.7609	0.4513	-2.3315	1.0568
MM	4.881	7.3607	0.6397	0.5261	-10.5528	20.3161
IBC	-1.3227	2.8966	-0.4566	0.6505	-7.1816	4.5363
APA	3.7260	3.4750	1.0722	0.2902	-3.3028	10.7546

Multiple R = 0.4665 R-Square = 0.2176 p-Value = 0.1228

Legend

TBM = Total number of Board Members

IBM = % of Independent Directors as a % of total board members

TM = Total number of meetings held in last financial year

MM = % of Directors who missed over 25% of meetings

IBC = Independent Chairman of board, independent of CEO

APA = Annual Performance Assessment of Directors

The total number of board members has a t-value of 2.5930 which indicates the strongest relationship to EPS. A p-value of 1.33% confirms that the total number of board members has a statistically significant relationship with the financial performance of a company as measured by EPS. Increasing the total number of board members will have a positive impact on the EPS; that is EPS will increase.

The other variables have t-values and p-values outside of the acceptable limits and therefore indicate that these variables have a weak relationship to EPS and hence are not statistically significant.

Studies carried out by Dalton et al (1998) and Pearce and Zahra (1992) predict board size to have a positive association with firm performance. Proponents of this view argue that a larger board will have representation of people with diverse backgrounds, who bring knowledge and skills and intellect to the board and thus improving the quality of strategic decisions. Goilden and Zajac (2002) have stated that smaller boards are assumed to have inadequate recognition of the need to initiate strategic change, a lack of clear understanding of alternatives, and/or lack of confidence in recommending strategic change.

From the results above it is clear that the size of the board has a statistically significant relationship to EPS. The findings above confirm the findings of the above research conducted by Dalton et al (1998) and Pearce and Zahra (1992).

Studies undertaken by Jensen (1993) have found that boards with eight or fewer directors are more effective in monitoring the CEO. Helland and Sykuta (2005) suggest that larger boards can be more effective monitors. The average size of the board in the sample of 46 companies is 14, which is considered large in the context of a SA company hence lending support to the findings of Helland and Sykuta. The results of the research does not concur with the findings of Jensen (1993) as there is a significant relationship between board size and financial performance as measured by EPS.

5.3 Results for ROA

We estimated the regression equation of ROA in relation to the variables; total number of board members, % of independent board members as a % of total board members, % of directors who missed over 25% of meetings, Independent Chairman of board, independent of CEO and annual performance assessment of directors. This regression equation (4) is referenced to in Chapter 3.7. The regression equation relates to proposition 3 which is testing the separation of the roles of the chairman of the board and the CEO on financial performance (ROA).

Table 7 presents the regression results for ROA as a measure of financial performance.

Table 6: Regression Results for Financial Performance (ROA)

	Co-efficient	**Std.Error**	**t-value**	**p-value**	**Lower Limit**	**Upper Limit**
Constant (α)	22.2178	9.9056	2.2429	0.0307	2.1818	42.2538
TBM	-0.3566	0.3736	-0.9546	0.3457	-1.1122	0.3990
IBM	-22.3367	10.6547	**-2.0964**	**0.0426**	-43.8878	-0.7856
TM	-0.3424	1.1259	-0.3041	0.7626	-2.6198	1.9350
MM	16.3263	10.2578	1.5916	0.1195	-4.4220	37.0747
IBC	3.8821	3.8939	0.9970	0.3249	-3.9940	11.7583
APA	0.7385	4.6713	0.1581	0.8752	-8.7101	10.1870

Multiple R = 0.4335 R-Square = 0.1879 p-Value = 0.2025

Legend

TBM = Total number of Board Members

IBM = % of Independent Directors as a % of total board members

TM = Total number of meetings held in last financial year

MM = % of Directors who missed over 25% of meetings

IBC = Independent Chairman of board, independent of CEO

APA = Annual Performance Assessment of Directors

The percentage of independent directors as a percentage of total board members (IBM) has a p-value of 4.26% which indicates a strong statistical significance with financial performance as measured by return on assets (ROA). Increasing the number of independent board members will enhance ROA.

The results obtained has shown that having an independent chairman of the board, independent of the CEO has no significant statistical relationship with ROA as the p-value is 32.49% and a t-value of 0.997 is outside of the acceptable limit. It can also be deduced that the probability of choosing the CEO, independent of the Chairman of the Board is increased as the number of independent directors comprising the board is increased.

The other variables have t-values and p-values outside of the acceptable limits, which implies a weak relationship with ROA and is therefore of little or no significance to financial performance of a company as measured by ROA.

The findings of this research is not consistent with that of Rechner (1989) and Daynton (1984) who argues that when one person dominates the company the role of the independent directors become hypothetical. It is also not consistent with the findings of Miller (1987) who also argues that the non-executive chairman promotes a higher level of corporate openness.

The results of the research have found that having the chairman of the board, independent of the CEO has no significant relationship with the financial performance of a company as measured by the ROA however increasing the percentage of independent directors as a percentage of total number of board members will increase financial performance as measured by EPS. The stringent definition of independence of a director adds weight to the fact that the independent directors will act as a “watchdog” over the shareholders interests and will force the CEO to take decisions in the best interests of the shareholders that will maximise shareholder wealth.

5.4 Results for ROE

We estimated the regression equation of ROE in relation to the variables; total number of board members, % of independent board members as a % of total board members, % of directors who missed over 25% of meetings, Independent Chairman of board, independent of CEO and annual performance assessment of directors. This regression equation (2) is referenced to in Chapter 3.7. This regression equation relates to testing the relationship between any of the variables and financial performance (ROE).

Table 6 presents the regression results for ROE as a measure of financial performance.

Table 7: Regression Results for Financial Performance (ROE)

	Co-efficient	**Std.Error**	**t-value**	**p-value**	**Lower Limit**	**Upper Limit**
Constant (α)	74.3300	18.0787	4.1115	0.0002	37.7625	110.8976
TBM	-0.7099	0.6818	-1.0412	0.3042	-2.0890	0.6692
IBM	-41.0583	19.4457	-2.1114	0.0412	-80.3910	-1.7257
TM	-2.3491	2.055	-1.1431	0.2599	-6.5056	1.8074
MM	-13.8313	18.7214	-0.7388	0.4645	-51.6988	24.0363
IBC	-0.2412	7.1067	-0.0339	0.9731	-14.6158	14.1334
APA	-6.8437	8.5255	-0.8027	0.4270	-24.0882	10.4007

Multiple R = 0.4095 R-Square = 0.1677 p-Value = 0.2758

Legend

TBM = Total number of Board Members

IBM = % of Independent Directors as a % of total board members

TM = Total number of meetings held in last financial year

MM = % of Directors who missed over 25% of meetings

IBC = Independent Chairman of board, independent of CEO

APA = Annual Performance Assessment of Directors

The t-values and p-values are all outside of the acceptable limits, which indicate that there is no significant relationship between the variables and ROE. It would seem that there are other variables that can be used to explain ROE.

An increase in IBM and TM will have a negative impact with ROE. ROE decreases as the number of independent board members increase or as board size increases. This perverse result implies that the board characteristics have no positive relationship with ROE.

The corporate governance factors pertaining to the board therefore have no impact on ROE as per the results obtained above.

In a study carried out by Leng (2004) in trying to identify the corporate governance practices that affect a firm's performance, the results concluded that the statistically significant variables that affect ROE are the size of a company in relation to turnover, the proportion of institutional investors and the gearing of the company. The insignificant variables affecting ROE are; the proportion of non-executive directors on the board, whether the chairman of the audit committee is a non-executive director, proportion of concentrated ownership and the separation of roles of the CEO and chairman of the board. The result obtained is therefore consistent with the results obtained in the study carried out by Leng (2004).

6 CONCLUSION

A substantial amount of research has been carried out internationally testing the relationship between corporate governance and financial performance. It is questionable whether these results could be applied in a South African context as South Africa is an emerging market and resources are limited. South Africa has been at the forefront of developing corporate governance standards and has subsequently implemented the King II Code of Corporate Governance. Very little research has been conducted to test the relationship between the board of directors and the financial performance of a company in South Africa. Therefore, this research report set out to investigate the relationship that corporate governance, as it pertains to the board of directors, has with the financial performance of companies in South Africa.

The critical corporate governance elements (independent variables); total number of board members, % of independent board members as a % of total board members, % of directors who missed over 25% of meetings, Independent Chairman of board, independent of CEO and annual performance assessment of directors were used to test the relationship with measures of financial performance, namely: Tobin's Q, EPS, ROA and ROE. These elements encompassed the essentials of board activities, independence of directors, board size and separation of roles of the chairman and CEO.

From the literature review, three propositions came to the fore: board composition, board size and separation of roles of the chairman and CEO that impacted the financial performance of a company. In order to test these propositions data was gathered from the research conducted by Grant and Motara (2006) as contained in the Deutsche Securities Report 2006. A sample of 46 companies listed on the JSE in 2006 was used. Regression equations for the measures of financial performance were estimated; to test the relationship between corporate governance, as it pertains to the board of directors and the financial performance of the company as measures by Tobin's Q, EPS, ROA and ROE.

The results of the regression equations for proposition 1: the independence of the board will have no impact on financial performance; it was found that the financial performance of the company in respect of Tobin's Q is not related to the composition of the board in terms of the number of independent directors. This finding does not concur with international findings. The other measures of financial performance were not significantly related to the number of independent directors.

The results of the regression equations for proposition 2: the size of the board has no impact on the financial performance of a company; it was found that the size of the board is critical in explaining EPS. An average board size of 14 has a positive impact on the financial performance of a company. It is clear that the board is pivotal in steering the company and supporting management. This is in line with international findings as presented in the literature review. The other measures of financial performance were not significantly related to the size of the board.

The results of the regression equations for proposition 3: the separation of the roles of the chairman of the board and the CEO is not effective or has no influence in enhancing financial performance; it was found that separating the roles of the chairman of the board and the CEO has no significant relationship with the financial performance of a company as measured by the ROA. The percentage of independent directors as a percentage of total directors has a statistically significant relationship with EPS. This finding is not consistent with international studies and the recommendation made by King II (2002) in separating the roles of the chairman and CEO. The other measures of financial performance were not significantly related to the separation of the roles of the chairman and CEO.

The corporate governance factors pertaining to the board have no impact on ROE as per the results obtained above.

It has emerged that the findings of this research is significant as it fills a gap in the literature in South Africa as it pertains to studying the relationship between board structure and company performance. Similar research has been carried out by Agrawal and Knoeber (1996), Brickley, Coles and Jarrekk (1997), Hermalin and Weisbach (1991) and Klein (1996) using data obtained from the United States and

the United Kingdom which are first world markets. The results above also sheds light and rejects the doubt cast by Firer *et al* (2005), where he questioned whether the results of the studies in first world countries could be applied to South Africa which is an emerging market.

As the board of directors are being called more into question, these results confirm that board structure and size has an influence on the financial performance of a company. The board of directors is therefore critical in steering the company towards shareholder wealth maximisation.

7 SUGGESTIONS FOR FUTURE RESEARCH

The results of the regression table for ROE as a measure of financial performance yielded no significant relationship between the variables and financial performance. ROE is often used as a measure of financial performance in the commercial world and it is probable that there has to be a link between ROE and corporate governance constructs as it pertains to the board of directors.

This research has been limited to three aspects that relate to the board of directors; namely, board size, independence of the board and duality of the chairman of the board and CEO. There are other factors such as economic factors, business cycles and certain characteristic of the board that may impact the financial performance of a company. It is also possible to classify companies into high growth and value companies or even a classification between different sectors for example industrial, financial and resources. The concentration of shareholding may also affect the composition of a board. A research examining the relationship of corporate governance constructs as it pertains to the board with financial performance may yield varied results when considering the above mentioned variables.

When performing the regression analysis on the current data set, as the number of independent variables were decreased the correlation between the variables decreased hence indicating that the correlation can be increased by adding more independent variables. It will be valuable to consider the above mentioned variables. The findings of the research will contribute significantly to the local body of literature currently available in SA.

REFERENCES

Adbullah, S.N. (2004) Board Composition, CEO duality and performance among Malaysian listed companies, *Corporate Governance*, 42, 47-61.

Agrawal, A. and Knoeber, C. (1996) Firm performance and mechanisms to control agency problems between managers and shareholders, *Journal of Financial and Quantitative Analysis*, 31, 377-397.

Ahwireng-Obeng, F.,Mariano, L. and Viedge, C. (2005) Influences on the performance effectiveness on non-executive directors in South Africa, *Southern Africa Business Review*, 9(3), 1-14.

Albright, S.C., Winston, W.L. and Zappe, C. (2006) *Data Analysis and Decision Making*, Thompson South-Western, United States of America.

Allan, P and Widman, A. (2000) A comparison of the views of CEOs and public pension funds on the Corporate Governance Issues of Chairman – CEO duality and Election of Lead Direcors, *American Business Review*, 18, 50.

Argenti, J. (1976) Corporate Collapse: The Causes and Symptoms, McGraw-Hill, London

Baysinger, B.D. and Butler, H.D. (1985) Corporate Governance and the Board of Directors: Performance effects of changes in board composition, *Journal of Law, Economics and Organisation*, 1, 101-124.

Beattty, R. and Zajac, E. (1994) Managerial incentives, monitoring, and risk bearing: A study of executive compensation, ownership, and board structure in initial public offerings', *Administrative Science Quarterly*, 39, 313-335.

Beck, M., Ethier, M., Mwangi, A. and Nwogwugwu, E. (2003) Being a Director, PricewaterhouseCoopers.

Beiner, S., Drobetz, W., Schmid, F. and Zimmermann, H. (2004) Is board size an independent corporate governance mechanism?, *Kylos*, 57, 327-356.

Bell, J. (2005) *Doing your Research Project*, Fourth Edition, Open University Press, Maidenhead.

Brickley, J., Coles, J. and Jarrekk, G. (1997) Corporate leadership structure: on the separation of the positions of CEO and chairperson of the board, *Journal of Corporate Finance*, 3, 189-220.

Cadbury Committee (1992), Report on Financial Aspects of Corporate Governance, Gee, London.

Chanduru, S. (2000) Corporate Governance and the director.

Chen, M., Hsu, C. and Shen, M. (2006) A Study of Ownership Structures and Firm Values Under Corporate Governance—The Case of Listed and OTC Companies in Taiwan's Finance Industry, *Journal of American Academy of Business, Cambridge,* 8 (1), 184.

Chung, K.E. and Pruitt, S.W. (1994) A simple approximation of Tobin's q, *Financial Management,* 23(3), 70-74.

Coulson-Thomas, C. (2005) Creating a winning board, *Strategic Direction,* 21(3), 3-4.

Daily, C.M. and Dalton, D.R. (1993), Boards of directors, leadership and structure: control and performance implications, *Entrepreneurship Theory and Practice*, Vol. 17, 65-81.

Dalton, D.R., Daily, C.M., Ellstrand, A.E. and Johnson, J.L. (1998) Number of Directors and financial performance: A meta-analysis, *Academy of Management Journal,* 42(6), 674-686.

Daynton, N.K. (1984) Corporate Governance: the other side of the coin, *Harvard Business Review*, 62(1), 34-47.

Dwivedi, N. and Jain, A.K. (2005) Corporate Governance and Performance of Indian Firms: The effect of Board Size and Ownership, *Employee Responsibilities and Rights Journal,* 17(3), 163.

Dyl, E.A. (1998) Corporate control and management compensation: Evidence on the agency problem, *Management and Decision Economics,* 9(1), 21-26.

Ezzamel, M.A. and Watson, R. (1993) Organizational form, ownership structure and corporate performance: A contextual empirical analysis of UK companies, *British Journal of Management,* 4(3), 161-176.

Fama, E.F. and Jensen, M.C. (1993a) Agency problems and the theory of the firm, *Journal of Law and Economics*, 26, 327-349.

Fama, E.F. and Jensen, M.C. (1993a) Separation of ownership from control, *Journal of Law and Economics*, 26, 301-325

Ferris, S.P., Jagannathan, M. and Pritchard, A.C. (2003) Too busy to mind the business? Monitoring by directors with multiple board appointments, *Journal of Finance*, 58, 1087-1111.

Firer, S. and Swartz, N.P. (2005) Board Structure and intellectual capital performance in South Africa, *Meditari Accountancy Research*, 13(2), 146.

Fonteyn, Y. (2002) Crisis in markets highlights corporate governance in SA, *Business Day*. Johannesburg: DBFM Publishers, 21 October, 7.

Fubara, I., Stimpert, J.L. and Wagner, J. (1998) Board Composition and Organizational Performance: Two Studies of Insider/outsider Effects, *The Journal of Management Studies,* 35(5), 655.

Gibbs, P.A. (1993) Determinants of corporate restructuring: The relative importance of corporate governance, takeover threat, and free cash flow, *Strategic Management Journal*, 14, 51-68

Goergen, M. and Renneboog, L. (2000) Insider Control by Large Investor Groups and Managerial Disciplining in Listed Belgian Companies, *Managerial Finance*, 26, 22-41.

Gomez-Mejia, L.R., Tosi, H. and Hinkin, T. (1987) Managerial control, performance and executive compensation, *Academy of Management Journal,* 30(1), 51-70.

Grant, G. and Motara, A. (2006) Beyond the Numbers, Deutsche Securities (Pty) Ltd, pp.24-25.

Hampel, R. (1998) Committee on Corporate Governance: Final Report, Gee, London.

Helland, E. and Sykuta, M. (2005) Who's monitoring the monitor? Do outside directors protect shareholders' interests?, *The Financial Review*, 40, 155-172.

Hermalin, B. and Weisbach, M. (1991) The effects of board composition and direct incentives on firm performance, *Financial Management*, 20, 101-112.

Jensen, M. (1993) The Modern Industrial revolution, Exit and the Failure of Internal Control Systems, *Journal of Finance*, 48, 831-880

Johnson, R.A., Hoskisson, R.E. and Hitt, M.A. (1993) Board of Director Involvement in restructuring: The effects of board versus managerial controls and characteristics, *Strategic Management Journal*, 14, 33-50.

Kesner, I.F. (1987) Directors Stock Ownership and Organisation Performance: An Investigation of Fortune 500 Companies, *Journal of Management*, 13, 499-507.

King II (King Committee Report on Corporate Governance) 2002. *The King Report on Corporate Governance in South Africa.* Johannesburg: The Institute of Directors in Southern Africa

Klein, A. (1996) Firm performance and board committee structure, Working Paper, New York University, New York.

Kosnik, R.D. (1987) Greenmail: a study of board performance in corporate governance, *Administrative Science Quarterly*, 32, 163-185.

Laing, D. and Weir, C. (2001) Governance Structures, director independence and corporate performance in the UK, *European Business Review*, 13 (2), 88.

Leedy, P.D. and Omrod, J.E. (2001) *Practical Research: Planning and Design*, 7th Edition, Upper Saddle River: Merrill Prentice Hall.

Leng, A.C.A. (2004) The Impact of Corporate Practices on Firms' Financial Performance: Evidence from Malaysian Companies, *ASEAN Economic Bulletin, Singapore,* 21(3), 308-318

Levy, L. (1993) Separate chairmen of the Board: Their roles, legal liabilities, and compensation, Research Report 1, Institute for Research on Boards of Directors, Inc.

Lind, D.A., Mason, R.D. and Marchal, W.G. (2000) *Basic Statistics for Business and Economics*, 3rd Edition, Boston: Irwin McGraw-Hill.

Lipton, M. and Lorsch, J.W. (1992) A modest proposal for improved corporate governance, *Business Lawyer*, 48, 59-77.

Lorsch, J.W. and MacIver, E. (1989) Pawns or potentates: The reality of America's corporate boards, Harvard Business School Press, Boston

Madura, J., Martin, A.D. and Jessl, K.A. (1996) Determinants of CEO compensation in small publicly- traded businesses, *American Business Review,* 14, 80-88.

Mak, V. and Roush, M.L. (2000) Factors affecting the characteristics of Boards of Directors: An Empirical Study of New Zealand Initial Public Offering Firms, *Journal of Business Research*, 47(2), 147.

Miller, W.H. (1997) Make it Chairman or CEO, *Industrial Week*, January, 50.

Millestein, I.M. and MacAvoy, P.W. (1998) The Active Board of Directors and Performance of the Large Publicly Traded Corporation, *Columbia Law Journal*, 98, 1283-1321.

Morck, R., Shleifer, A. and Vishny, R. (1988) Management Ownership and Market Valuation: An Empirical Analysis, *Journal of Financial Economic*, 20, 293-315.

Pearce, J.A. and Zahra, S.A. (1992) Board Composition from a strategic contingency perspective, *Journal of Management Studies,* 29, 411-438.

Rechner, P. and Dalton, D. (1991) CEO duality and organisational performance: a longitudinal study, *Strategic Management Journal*, 13, 155-160.

Rechner, P.L. (1989) Corporate Governance: fact or fiction?, *Business Horizons*, 32(4), 11-15.

Schellenger, M.H., Tashakori, A. and Wood, D.D. (1989) Board of Director composition, shareholder wealth and dividend policy, *Journal of Management*, 15, 457-467.

Shleifer, A. and Vishny, R. (1997) A survey of Corporate Governance, *Journal of Finance*, 52, 737-783.

Slater, S. and Lovett, D. (1999) Corporate Turnaround: Managing Companies in Distress, Penguin, London.

Tosi, H.L. and Gomez-Mejia, L.R. (1994) CEO compensation and firm performance, *Academy of Management Journal,* 37(4), 1002-1016.

Van Staden, C.J. (1998) The usefulness of the value added statement in South Africa, Pretoria, South Africa, Faculty of Economic and Management Sciences, University of Pretoria. (D Comm – unpublished).

APPENDIX A

Board Characteristics and Financial variables for JSE companies for 2006
Data Table A

Observation	Company	Tobin's Q	EPS	ROE	ROA	Total No. of Board Members	No. of Independent Board Members - % of Total	No. of Meetings in last Financial Year	No. of directors who missed 25% of meetings % of Total	Independent Chairman of Board: Yes =1, No=0	Annual Performance Assessment of Directors: Yes=1, No=0
1	Anglo American	1.54	4.01	27.00	17.20	15	60%	8	0%	1	1
2	African Bank	6.42	2.23	52.70	14.80	19	47%	6	17%	1	1
3	Aveng	4.26	1.45	18.30	6.30	11	45%	5	40%	1	1
4	Anglo Plat	7.63	45.42	46.70	30.80	19	21%	4	25%	0	1
5	Anglo Gold Ashanti Ltd	4.06	11.67	11.70	4.40	17	47%	6	17%	1	1
6	African Rainbow Minerals	1.52	3.61	7.20	4.40	17	41%	4	50%	0	0
7	ABSA	2.73	11.28	26.50	1.70	21	14%	9	33%	0	0
8	AVI	2.55	1.06	15.00	8.20	11	55%	4	25%	0	1
9	Brait	2.52	3.04	37.20	20.80	13	8%	4	0%	0	0
10	Barloworld	2.42	11.48	19.10	8.20	19	26%	6	0%	0	1
11	BHP Billiton	240.01	1.68	50.00	22.10	14	50%	7	0%	0	1
12	Bidvest	4.62	7.68	29.80	10.90	24	21%	4	0%	1	1
13	Coronation Fund Managers Ltd	11.92	0.55	87.90	0.00	5	40%	4	25%	0	0
14	Consol Limited	3.35	1.14	25.00	16.50	6	50%	5	0%	1	1
15	DRD Gold	5.03	-0.53	0.00	0.40	6	50%	5	0%	1	1
16	FirstRand	3.15	1.44	24.60	1.90	18	22%	5	20%	0	1
17	Gold Reef Casino	3.22	1.22	21.50	18.70	9	11%	6	33%	0	1
18	Goldfields	3.22	2.49	9.20	6.50	13	0%	10	10%	1	1
19	Group 5 Ltd	4.94	1.89	21.60	4.10	8	50%	4	25%	0	1
20	Harmony	2.03	-2.63	-3.90	-2.90	9	56%	4	0%	0	1
21	Impala Platinum	7.01	7.58	28.10	19.80	13	38%	5	0%	1	1
22	Investec Plc	4.03	0.42	32.70	0.00	17	35%	6	0%	0	1
23	Imperial Holdings Ltd	2.80	11.49	23.10	6.90	21	29%	5	0%	1	1
24	Lonmin Plc	433.01	2.88	32.50	17.30	9	56%	6	0%	1	1
25	Mittal Steel SA Ltd	1.65	10.54	21.80	16.70	10	40%	5	40%	0	0
26	MTN Group	3.44	6.30	42.30	17.80	12	50%	9	0%	1	1
27	Murray & Roberts Holdings Ltd	3.61	1.85	16.30	6.50	15	60%	5	20%	1	0
28	Mvelaphanda Resources Ltd	0.92	1.40	58.90	48.80	12	8%	5	80%	0	0
29	Nedbank Group Ltd	2.08	10.29	19.40	1.20	19	26%	8	25%	0	1
30	Northam	5.78	2.83	39.30	32.20	10	20%	5	80%	0	0
31	Nampak Ltd	2.33	1.47	16.00	8.10	13	15%	6	0%	0	1
32	Naspers	6.30	7.17	46.40	20.40	12	42%	5	20%	0	1
33	Pick 'n Pay Stores	18.76	1.44	89.00	11.20	12	8%	4	0%	0	1
34	Pretoria Portland Cement co Ltd	9.47	22.57	58.20	35.60	12	17%	5	0%	0	1
35	Peermont Global Ltd	2.79	0.76	17.90	12.80	9	56%	6	17%	1	0
36	Remgro	3.61	10.18	41.60	34.30	14	21%	6	17%	0	1
37	SAB Miller	115.71	1.06	14.50	7.50	14	36%	7	14%	0	1
38	Sappi	14.95	-0.09	-1.10	-0.30	13	62%	5	20%	0	1
39	Standard Bank	2.62	7.87	23.40	1.90	18	28%	5	20%	0	1
40	Shoprite	4.86	1.45	33.80	10.70	13	23%	4	25%	0	1
41	Sasol	3.05	22.58	30.00	15.60	16	44%	4	25%	0	1
42	Spar Group Limited	8.60	2.31	49.50	13.10	7	57%	4	0%	1	1
43	Sun International Limited	4.27	5.39	19.30	8.00	15	33%	6	0%	0	1
44	Tiger Brands	1.44	11.76	11.10	8.30	16	44%	7	29%	0	1
45	Telkom	2.40	17.40	32.90	15.90	11	36%	6	33%	0	1
46	WBHO	5.97	3.16	33.00	8.00	5	20%	4	25%	0	1

Source: Beyond the Numbers, Deutsche Securities (Pty) Ltd, JSE Limited