

The impact of executive share options on company performance in South Africa

Fredell Jacobs

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

Johannesburg, 2008

ABSTRACT

Executive share options are often cited as performance incentives that align management and shareholder interest. This research report examines the impact of executive share options on company performance and test if there is a significant difference in performance between companies with different levels of share options. The problem is defined in two parts, one looking at company performance and the other management decision making. It employ share price cumulative annual returns, average Tobin's Q and average return on assets over five years to define company performance. While the influence of management decision making is defined through the average dividend yield and debt/equity ratio over five years. This research report ignored the variability and risk component associated with share options and the performance and management decision making variables. It also excludes any attempt to comment on the effectiveness of share options as part of executive compensation. A regression analysis and two T-tests were employed on a sample of 203 JSE listed companies. Reliable data was sourced directly from two financial market data specialist. With the exception of ROA there was a significant statistical relationship between share options and the respective variables. However, these findings cannot be accepted as conclusive due to the violation of many normality assumptions. There was no evidence of any significant statistical difference between companies with higher than the mean or lower than the mean share option ratio, with the exception of Tobin's Q. In contrast to this a secondary T-test revealed evidence of a significant statistical difference between the mean return on assets and mean dividend yield for companies with and companies without share options. While there was no evidence of any significant statistical difference between the mean cumulative annual average returns, Tobin's Q and debt/equity ratio of companies with share options and those without. This leads one to conclude that share options do not have a significant impact on company performance.

DECLARATION

I, Fredell Jacobs, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Fredell Danver Jacobs

Signed at

On the day of 2008

Dedication

To Henriehetta Jacobs, with her ever inspiring words of wisdom, always encouraging me never to settle for anything less than one's full potential. To Alicia who will one day need to sharpen her saw ascending to her full potential and to Marianne for her undying love, fountain of patience and mountain of support.

Acknowledgements

My sincere gratitude goes to Professor Mthuli Ncube for proving a source of motivation, professional guidance and unwavering support. I am especially grateful for the resourceful insights I was privilege to absorb under his supervision that deepened my interest in financial markets.

I must also mentioned the individuals that always had a pat on the back handy, a word of encouragement ready and a dose of reality in stock, thank you for keeping the light shining in the end of the tunnel. They include, Khulekani, Ronald, Dominique, Faizel, Noah, Monique, Conrad, Wendy, Zimasa, Merilyn, Gavin, Des, Sally, Phillip, Alfredeen and Celeste.

TABLE OF CONTENTS

ABSTRACT	II
DECLARATION.....	III
DEDICATION	IV
ACKNOWLEDGEMENTS.....	V
LIST OF TABLES.....	IX
LIST OF FIGURES	X
CHAPTER 1: INTRODUCTION	1
1.1. PURPOSE OF THE STUDY	1
1.2. CONTEXT OF THE STUDY.....	2
1.3. PROBLEM STATEMENT	3
1.3.1. MAIN PROBLEM.....	3
1.3.2. SUB-PROBLEMS.....	3
1.4. SIGNIFICANCE OF THE STUDY	4
1.5. DELIMITATIONS OF THE STUDY.....	4
1.6. DEFINITION OF TERMS	5
CHAPTER 2: LITERATURE REVIEW	6
2.1. INTRODUCTION	6
2.2. BACKGROUND ON SHARE OPTIONS AS PART OF EXECUTIVE COMPENSATION. ...	7
2.3. SHARE OPTIONS AS AN INCENTIVE MECHANISM	9
2.3.1 CONCLUSION	10
2.4. THE IMPACT OF EXECUTIVE SHARE OPTIONS ON COMPANY PERFORMANCE	10
2.4.1 EXECUTIVE SHARE OPTIONS, MANAGERIAL DECISION MAKING COMPANY RISK AND VALUE 11	
2.4.2 CONCLUSION.....	12
2.5. CONCLUSION OF LITERATURE REVIEW	12
2.6. TESTABLE HYPOTHESIS.....	13
CHAPTER 3: RESEARCH METHODOLOGY	15
3.1. INTRODUCTION	15
3.2. RESEARCH METHODOLOGY	16
3.3. VALIDITY AND RELIABILITY	16
3.3.1 EXTERNAL VALIDITY	16
3.3.2 INTERNAL VALIDITY.....	17

3.3.3	RELIABILITY	17
3.3.4	LIMITATIONS AND ETHICAL CONSIDERATION.....	17
3.4.	RESEARCH DESIGN.....	17
CHAPTER 4: THE DATA		20
4.1.	POPULATION AND SAMPLE	20
4.2.	DATA SOURCE	20
4.3.	DATA SUMMARY	20
4.4.	SHARE OPTION DATA	21
4.5.	VARIABLE DESCRIPTION	22
4.5.1	SHARE OPTION RATIO.....	22
4.5.2	CUMULATIVE ANNUAL AVERAGE RETURNS	22
4.5.3	TOBIN'S Q.....	22
4.5.4	RETURN ON ASSETS.....	22
4.5.5	DIVIDEND YIELD	23
4.5.6	DEBT/EQUITY RATIO	23
CHAPTER 5: DISCUSSION OF THE RESULTS.....		25
5.1.	INTRODUCTION	25
5.2.	SHARE OPTION RATIO ANALYSIS	25
5.3.	CUMULATIVE ANNUAL AVERAGE RETURNS.....	26
5.4.	TOBIN'S Q.....	31
5.5.	RETURN ON ASSETS	37
5.6.	DIVIDEND YIELD.....	39
5.7.	DEBT / EQUITY RATIO.....	45
CHAPTER 6: SECONDARY T-TEST		50
6.1.	INTRODUCTION	50
6.2.	CAAR	50
6.3.	TOBIN'S Q.....	51
6.4.	ROA.....	52
6.5.	DIVIDEND YIELD.....	53
6.6.	DEBT / EQUITY RATIO.....	55
CHAPTER 7: CONCLUSION		57
7.1.	FUTURE RESEARCH	59

REFERENCES	61
APPENDIX	66
SHARE OPTION DATA.....	66
SHARE DATA – SHARENET	73
NCSS - T-TEST SUMMARY OUTPUTS	99

LIST OF TABLES

Table 1: Share Option Summary	21
Table 2: Data Summary	23
Table 3: Summary Statistics - Share Option Ratio	24
Table 4: Regression Output - Share Option Concentration & CAAR.....	27
Table 5: Summary CAAR.....	29
Table 6: T-Test - CAAR Above and Below the share option ratio mean	30
Table 7 : Tobin's Q Regression Output	31
Table 8 : T-Test Tobin's Q Above and below mean share option ratio.....	35
Table 9: Assumptions.....	36
Table 10: Mann-Whitney U Test.....	36
Table 11: Regression Output – ROA.....	38
Table 12: T-Test ROA Below and above share option concentration ratio mean	39
Table 13: Regression Output - Dividend Yield	40
Table 14: T-Test Dividend Yield - Above and Below share option ratio mean .	44
Table 15: Regression Output - Gearing	45
Table 16: T-Test Gearing	48
Table 17: T- Test CAAR.....	50
Table 18: T-Test Tobin's Q.....	51
Table 19: T-Test ROA	52
Table 21: Mann Whitney Test – ROA.....	53
Table 20 : Assumptions Section.....	52
Table 22: T- Test Dividend Yield	54
Table 23: Assumptions Section.....	54
Table 24: Mann-Whitney U test.....	55
Table 25: T-Test Debt-Equity	55

LIST OF FIGURES

Figure 1: Histogram Share Option Concentration Ratio	25
Figure 2: Share Option Ratio.....	26
Figure 3: Histogram - Residuals of CAAR_1	28
Figure 4: Normal Probability Plot of Residuals of CAAR_1	28
Figure 5: Residuals vs. Predicted Figure 6: Residuals vs. Actual	29
Figure 7: Histogram - Residuals Tobin's Q_1	32
Figure 8: Normality Plot of Residuals of Tobin's Q	33
Figure 9: Residuals vs. Predicted.....	33
Figure 10: Residuals vs. Actual.....	34
Figure 11: Histogram - Residuals of Dividend Yield	41
Figure 12: Normal Probability Plot of Residuals of DY	42
Figure 13: Residuals vs. Predicted.....	42
Figure 14: Residuals vs. Actual.....	43
Figure 15: Histogram of Residuals - Debt / Equity	46
Figure 16: Normal Probability Plot.....	47
Figure 17: Residuals vs. Predicted.....	47
Figure 18: Residuals vs. Actuals	48

CHAPTER 1: INTRODUCTION

Executive compensation and company performance has invited much debate, criticism and academic research in recent years as share options increased from 30% as a component of executive compensation in 1992, to 56% in 1999 in the United States (Hall and Murphy 2002). Klinger, Hartman, Anderson and Chavanagh (2002) described share options as the strongest influence on excessive CEO pay (Klinger et al. 2002). In recent years and especially in the US, share options, as part of executive compensation, has attracted ongoing criticism and persistent request to be treated as an expense (Klinger et al. 2002).

The classical agency theory put forward by Jensen and Meckling (1976), which suggest that appropriate incentives can align management and shareholder interest is often cited as one of the critical reasons for awarding share options to executives (Jensen and Meckling 1976). This research report will delve into this issue and investigate the impact of share options on company performance to determine wheter it creates shareholder wealth through better performance.

1.1. Purpose of the study

The purpose of this research is to investigate the impact of executive share options as part of executive compensation on company performance in South Africa. It will aim to answer whether executive share options achieve its incentive effects and investigate if indeed it induces management to focus on delivering shareholder value and wealth creation as suggested by Murphy (1995).

This study will aim to contribute to the existing literature by investigating whether the fundamentals suggested in the seminal work by Jensen and Meckling (1976) and the subsequent contributions by Haugen and Senbet (1981), Agrawal and Mandelker (1987), Jensen and Murphy (1990) around aligning management and shareholder interest holds true for South African

listed companies. It will investigate company performance within the agency theory framework and examine the impact on shareholder wealth and the influences on company performance through management decision making.

1.2. Context of the study

The context of this study includes a South African perspective on investigating the effects of share options as put forward by Jensen and Meckling (1976) and examines the impact on company performance in terms of shareholder wealth creation (Jensen and Meckling 1976). In this context shareholder wealth creation will follow the definition employed by Murphy (1995), which refers to share price appreciation as well as to the methods employed by (DeFusco, Johnson and Zorn, 1990) who looked at the variability of share price returns for companies with share option plans. It will also look at changes in capital structure as a proxy for managerial decision making as done by Agrawal and Mandelker (1987) who studied the relationship between managerial equity ownership and changes in financial leverage of companies (Agrawal and Mandelker 1987). This study will also explore if companies with stock options as part of executive compensation display higher cumulative average share price returns as suggested by DeFusco et al. (1990) who also found evidence of higher variability of ROA and concluded that management with stock options take on riskier capital investments projects (DeFusco et al. 1990).

The study will follow similar methodologies to that of DeFusco et al. (1990) and (DeFusco, Zorn and Johnson, 1991) and examine a broad perspective of company performance and shareholder wealth creation as a result of managerial decision making and will include share price returns, dividend yields, financial leverage or gearing, and Tobin's Q (DeFusco et al. 1990; DeFusco et al. 1991). It will aim to provide conclusions on the impact of share options as part of executive compensation on company performance in South Africa, where company performance is defined as shareholder wealth creation as done by Jensen and Murphy (1990) and Chen (2001) who looked at share price returns and Tobin's Q (Jensen and Murphy 1990; Chen 2001).

1.3. *Problem statement*

1.3.1. Main problem

This research will investigate the impact of executive share options as part of executive compensation as an incentive mechanism to create shareholder wealth and how this impacts on company performance and managerial decision making. The context of agency theory as put forward by Jensen and Meckling (1976), corporate performance and shareholder wealth creation as put forward by Jensen and Murphy (1990), and the impact on managerial decision making as suggested by DeFusco et al. (1991) will provide the framework for discussion and investigation as the background to the main problem.

The research will aim to provide insight into the effectiveness of executive share options as an incentive mechanism for South African managers. It will assess the impact of share options as part of executive compensation for companies listed on the Johannesburg Securities Exchange (JSE). It will seek to provide evidence of how company performance is a product of management decision making and how this impacts on shareholder wealth (Vogel and McGinnis 1999).

1.3.2. Sub-problems

The first sub problem will investigate the effectiveness of share options as an incentive mechanism as part of executive compensation. This investigation will follow the methodologies employed by DeFusco et al. (1990) who looked at the variance of share price returns to determine if share options are effective as an incentive mechanism in aligning management and shareholder interest. The impact on the alignment of shareholder interest will be measured in terms of shareholder wealth creation and the research will investigate if companies with share option plans have significantly outperformed companies without share options. The second sub-problem will investigate how share options, as part of executive compensation, influence managerial decision making with reference to company risk, investment and value and will look at return on assets (ROA) as an accounting measure for company performance and

dividend yield and financial leverage as a proxy for managerial decision making (DeFusco et al. 1991). This sub-problem will be addressed by looking for evidence of any significant difference in ROA and dividend yield for companies with share options and compare that against those without share options.

1.4. *Significance of the study*

Theoretically, it will add to the current literature and provide a South African perspective by adding to the existing literature on emerging markets by Chen (2001), (Guo, Shaih-Hou and Yang, 2006) and (Kato, Kim and Lee, 2007) who all looked at the relationship between share options as part of executive compensation and company performance. It will also provide a basis for further studies on the effectiveness of executive compensation practices in South Africa.

Practical significance will be in the form of gathering evidence to determine the effectiveness of corporate boards and compensation committees in designing compensation plans that create shareholder wealth. It will provide indications of how share option schemes as part of compensation influence management decisions that impact on company performance (DeFusco et al. 1990). It will also contribute to evidence of the effectiveness of corporate governance in achieving shareholder and management alignment that creates shareholder wealth. Further to this, it will provide testimony of the effectiveness of governance mechanisms related to compensation committees. It will also provide an opportunity to evaluate how South African corporate boards measure up against international standards, best practice and performance benchmarks, and expose some topical issues for further and future research.

1.5. *Delimitations of the study*

This research report will concentrate on investigating the link between share options as part of executive compensation and company performance for South African listed companies. It will build on the confirmation of prior studies that confirmed the link between share options, managerial behaviour, and company performance (Jensen and Meckling 1976; Haugen

and Senbet 1981; Jensen and Murphy 1990). Company performance will be defined through ROA, share price performance, dividend yield and Tobin's Q (DeFusco et al. 1990; DeFusco et al. 1991; Murphy 1995; Mohan and Ruggiero 2007). It will investigate and examine the capital structure as a definition and framework for company risk as defined by Agrawal and Mandelker (1987), DeFusco et al. (1991) and Vogel and McGinnis (1999) who all considered changes in capital structure and financial leverage as a result of management decision making and risk taking.

This study will not report on the effectiveness of corporate governance although much of the literature confirms the link between corporate governance and executive compensation (Murphy 1995; Core et al. 1999; Chhaochharia and Grinstein 2007). It will not aim to explain which mix of compensation is optimal to achieve maximum incentive alignment benefits.

1.6. Definition of terms

The following terms will be widely used throughout this research report

share options – the right to buy the underlying asset at a future date at a certain price (Hull 2006). The share options definition for this research report will be that of an call option only.

ROA – Return on Assets – Net Profit after tax/Total Assets

Tobin's Q – The ratio of market price to replacement cost of assets
Assumptions

Dividend Yield – The dividend paid divided by the share price dividend to share price

Gearing – Ratio of Debt to Equity

The underlying assumption for this research is that there is a link between executive compensation and company performance that influence managerial decision making as found by the works of Haugen and Senbet (1981), Agrawal and Mandelker (1987), Jensen and Murphy (1990), DeFusco et al. (1991) and Vogel and McGinnis (1999).

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

The literature review starts with a background sketch and considers the seminal and classical work of Jensen and Meckling (1976) as the foundation for structuring the research problem. This famous article, which was followed and expanded on by Haugen and Senbet (1981) and Agrawal and Mandelker (1987), refers to the performance relationship that exists between compensation and firm performance under the agency theory framework (Jensen and Meckling 1976; Haugen and Senbet 1981; Agrawal and Mandelker 1987). The background includes a chronological review of how the literature developed under this topic and how different works contributed different results in explaining this performance relationship. The introduction to the research problem finds its roots in the concept, whether share options, as part of executive compensation, create appropriate incentives that deliver shareholder wealth. This problem is examined from a classical agency theory perspective, but also considers the modern application of corporate governance that ultimately determines executive compensation. The literature provides a framework that facilitates an investigation under different hypotheses which is the methodology for investigating the main problem, and associated sub-problems, as identified in the problem statement.

The second part of the literature review provides evidence of how managerial decision making is influenced by share options and how this influence company performance and risk. Company performance and risk are defined through application of previous theories and concepts which allows the introduction of additional hypotheses to test the relationship between executive compensation, company performance and managerial decision making.

2.2. Background on share options as part of executive compensation.

Most of the literature on share options as part of executive compensation finds its roots in the seminal work by Jensen and Meckling (1976) who looked at how managerial behaviour is influenced through equity ownership and the effects on agency cost (Jensen and Meckling 1976). This famous article presents the theory of a firm under different ownership structures and the impact on agency cost under a framework of Pareto optimality (Jensen and Meckling 1976). Agrawal and Mandelker (1987) found further support for share options as part of executive compensation in their argument that share options reduce agency cost (Agrawal and Mandelker 1987). Jensen and Murphy (1990) examined the performance relationship between shareholder wealth and executive wealth, and found conclusive evidence that share options are the best incentive mechanism (Jensen and Murphy 1990). Their study investigated the pay-performance sensitivity for cash compensation, share ownership, share options, and threat of dismissal and found the largest pay-performance sensitivity with share options with relative low fractional ownership of the firm in 1990 (Jensen and Murphy 1990). They conclude that share options have the ability to create incentives that will focus executive efforts on creating shareholder wealth (Jensen and Murphy 1990). DeFusco et al. (1990) also confirmed that managerial share holding reduce agency cost providing further support and encouragement for companies to include more share options in compensation plans in the early 1990's (DeFusco et al. 1990). Additional support for share options as part of executive compensation comes from DeFusco et al. (1991) who argue that share options helps to reduce agency and monitoring cost (DeFusco et al. 1991). Hall and Murphy (2002) looked at companies on the S&P 500 and found that in 1992, 82% of companies were granting share options as part of executive compensation (Hall and Murphy 2002). Murphy (1995) put forward one of the strongest arguments for aligning executive compensation practices with shareholder wealth creation (Murphy 1995). He states that corporate boards must provide incentives that create value and should ignore attacks on high CEO compensation (Murphy 1995). Murphy argues that traditional pay practices failed to provide executives

with meaningful incentives to create shareholder wealth in the modern economic environment (Murphy 1995). Murphy present three alternatives that are available to managers in a growth, stable and declining economic environment and argue that incentives should be aligned to create wealth for shareholders in any of these three economic scenarios (Murphy 1995). In 1999, 94% of companies listed on the S&P 500 were granting share options as part of executive compensation (Hall and Murphy 2002). The incentive effects of stock options was also confirmed by Guay (1999) who investigated share options and CEO wealth sensitivity and found evidence that share options are strong enough to generate incentives that will entice managers to take more risk (Guay 1999).

In recent times executive share options have become the largest portion of executive compensation plans as found by Hall and Murphy (2002) in an eight year study of companies listed on the S&P 500 Industrial (Hall and Murphy 2002). This study showed that equity based compensation made up only 30% of total compensation in 1992 and this increased to 56% in 1999 (Hall and Murphy 2002). In light of this increase of share options as a component of executive compensation, windfall wealth effects, mediocre corporate performance, and large corporate scandals in the US, a lot of the more recent literature focuses on regulatory changes and reporting standards (Murphy 1995; Harris and Livingstone 2002; McGuinness 2002; Farber 2005; Chhaochharia and Grinstein 2007). Other studies stimulated the emergence of new arguments and a stronger focus on corporate governance, executive compensation and company performance (J.E. Core et al. 1999; Hermalin and Wallace 2001; Dutta 2003; Mohan and Ruggiero 2007).

The fundamental question that still relates to agency theory that continues to surface in all these studies, is how effective share options are as incentives to create shareholder wealth (Jensen and Meckling 1976)? This question needs even deeper analysis from markets outside of the US who wish to attract foreign investment. Some scholars have contributed to an examination of this question in the context of corporate governance (Weir and Laing 2001; Klapper and Love 2004; Okeahalam 2004; Berglof and Pajuste 2005; Abdullah 2006). Others dealt with it head on and produced

insights into compensation and company performance relationships in Singapore, (Yeo, Chen, Ho and Lee 1999), Italy, (Brunello, Graziano, and Parigi 2001), China, (Chen 2001), (Kato and Long 2006), and the Netherlands, (Duffhues and Kabir 2007) to provide an emerging market perspective. It is evident that the current literature on emerging markets will benefit from a supplementary investigation into this question from a South African perspective and contribute towards additional insights in the emerging market landscape.

2.3. *Share options as an incentive mechanism*

Most arguments in favour of share option compensation argue the incentive capability to align executive and shareholder interest (Jensen and Meckling 1976; Haugen and Senbet 1981; Jensen and Murphy 1990). Murphy (1995) defines shareholder interest as shareholder value creation which includes a combination of accounting and market performance indicators (Murphy 1995). These performance indicators include share price returns and an investigation into the variability of share price returns as was also done by Agrawal and Mandelker (1987) who found evidence that executive share holdings induce investment decisions that are aligned to shareholder interest (Agrawal and Mandelker 1987; Murphy 1995). Agrawal and Mandelker (1987) argue that large stock or options holdings induce managers to invest in risks increasing projects (Agrawal and Mandelker 1987). They also found evidence that changes in company financial leverage are a product of share options as part of compensation and conclude that this helps to reduce agency problems and cost (Agrawal and Mandelker 1987). Jensen and Murphy (1990) further emphasize the performance relationship in their study and confirmed that share options are the best incentive mechanism to align shareholder and executive interest due to the potential wealth effects that exist for the executive (Jensen and Murphy 1990). This sentiment is shared by Himmelberg, Hubbard and Palia (1999) who stated that the most appropriate solution to prevent managers employing corporate assets to their own benefit is an equity stake in the firm (Himmelberg et al. 1999). Jensen and Murphy (1990) also suggest that incentives increase with the executive's fractional ownership of the firm,

while Core and Guay (1999) argues it increases as the dollar value of executive ownership increases (Jensen and Murphy 1990; J. Core and Guay 1999).

2.3.1 Conclusion

The overarching theme from the literature suggests that share options are an appropriate incentive mechanism to achieve management and shareholder interest alignment (Jensen and Meckling 1976; Haugen and Senbet 1981; Jensen and Murphy 1990). The literature also provides evidence that there are very specific indicators that can be employed to measure how effective share options are in aligning management and shareholder interest (DeFusco et al. 1991; Vogel and McGinnis 1999). It provides a firm foundation for further research that can investigate whether one will find similar evidence for South African listed companies.

The literature also provides a range of measures and research methodologies that can be employed to test for the alignment between management and shareholder interest (Agrawal and Mandelker 1987; DeFusco et al. 1990; Jensen and Murphy 1990; DeFusco et al. 1991; Murphy 1995; Core et al. 1999; Chen 2001). These include accounting and financial measures such as ROA and profitability, shareholder wealth creation measures such as Tobin's Q and share price performance as well as indicators that are influenced by managerial decision making, such as financial leverage and dividend yields. It therefore provides a constructive foundation to investigate the main problem and the sub-problems identified for this research project.

2.4. The impact of executive share options on company performance

Company performance is a product of managerial decision making and this influenced company risk (DeFusco et al. 1991). The link between compensation levels, CEO wealth, company investment and performance requires closer investigation to really test for shareholder interest alignment. The next section will examine the literature around this topic.

2.4.1 Executive share options, managerial decision making company risk and value

It is evident from the literature that share options influence managerial decision making (Jensen and Meckling 1976; Jensen and Murphy 1990; DeFusco et al. 1991). Management decisions ultimately influence investment and capital allocation decisions which will in turn have an effect on capital structure and firm risk (DeFusco et al. 1991). DeFusco et al. (1991) provide a definitive framework for evaluating managerial decision making and the link to shareholder value creation (DeFusco et al. 1991). They examined 987 firms over a five year period and studied risk taking, investment and capital structure changes (DeFusco et al. 1991). The variables included in their study were ROA, variance in ROA, Debt/Asset ratio, dividend yield, research and development (R&D) intensity, capital expenditure ratio and selling expense ratio (DeFusco et al. 1991). Haugen and Senbet (1981) constructed a model that included share options as part of compensation and concluded that managers will engage in more risky projects if there are share options (Haugen and Senbet 1981). Guay (1999) also found that managers will be more willing to invest in high risk positive net present value (NPV) projects due to the relationship between their own wealth, the high potential of higher increases in their own wealth and share price appreciation (Guay 1999). Chakraborty, Kazarosian and Trahan (1999) found evidence that managers consider future compensation when making decisions and it was concluded that stock option plans have an effect on CEO decision making (Chakraborty et al. 1999). Datta, Iskandar-datta and Raman (2005) also found that managerial compensation will have an effect on corporate financing decisions that will bring about a change in the firm's capital structure (Datta et al. 1999). Management decisions and behaviour translate into allocating capital resources which have an effect on company risk (Baker, Collins and Reitenga 2003). This risk relationship is also identified by Vogel and McGinnis (1999) who found that firm risks increase, when long-term performance plans that include stock options, are adopted (Vogel and McGinnis 1999). Agrawal and Mandelker (1987) found that options as incentives increase both company and share price risk where company risk

is defined as the capital structure of the firm (Agrawal and Mandelker 1987). Baker, Collins and Reitenga (2003) points out that share buy backs, which generally cause an increase in share price value, increases when managers have share options (Baker et al. 2003). Vogel and McGinnis (1999) found an increase in asset growth and asset volatility while firm leverage increases to fund asset growth for companies where managers have share options as part of executive compensation (Vogel and McGinnis 1999).

2.4.2 Conclusion

There is concrete evidence in the literature that a link exist between executive compensation, managerial decision making, firm risk and value (Jensen and Meckling 1976; Haugen and Senbet 1981; Agrawal and Mandelker 1987; Chakraborty et al. 1999; Guay 1999). Company risk, measured and defined as the change of capital structure of the firm, and the variability of ROA provides confirmation on the effectiveness of the methods employed by Vogel and McGinnis (1999) to measure the impact of incentive compensation on managerial decision making (Vogel and McGinnis 1999). This confirmation drawn from the literature of the link between share options, as part of executive compensation, managerial decision making and company risk provide the foundation for investigating the second sub-problem identified in this research report. The elements for firm risk can be distinctly identified and consistently measured which will enhance the credibility of this research problem and the related investigation that will follow.

2.5. *Conclusion of Literature Review*

There is strong evidence presented in the literature that there is a need to evaluate the impact of share options as part of executive compensation in a South African context as it affects managerial decision making and ultimately, shareholder value creation. This is especially important for emerging markets that hope to attract foreign direct investment in equity markets (Klapper and Love 2004). The methodologies employed in the majority of these studies build on the work of Jensen and Meckling (1976)

which all presented evidence and confirmation that a relationship exists between compensation and performance. Additional confirmation by Jensen and Murphy (1990) that share options provide the strongest incentive was also presented (Jensen and Meckling 1976; Jensen and Murphy 1990). In the light of this and the continued need to make more information available about corporate performance in South Africa, this research report will rely on many of the methodologies employed in the literature to construct related hypotheses to provide answers to the main problem and sub-problems as presented in the problem statement.

2.6. Testable Hypothesis

The hypotheses are linked to the findings in the works of previous scholars such as Agrawal and Mandelker (1987), Jensen and Murphy (1990), De Fusco et al. (1991) and Vogel and McGinnis (1999) who critically evaluated the incentive ability and the effects of share options on company performance and executive decision making.

The first two hypotheses will address the first sub-problem and test whether share options create incentive alignment that motivates managers to create shareholder wealth. Shareholder wealth is defined as the cumulative average annual returns (CAAR) of the share price and the Tobin's Q ratio. Share options concentration levels is the ratio of the value of the number of share options outstanding to the total value of issued share capital (Agrawal and Mandelker 1987).

Therefore:

H_0 : Share options have no impact on CAAR.

H_1 : Companies a higher share option ratio will have higher levels cumulative average annual share price returns.

Furthermore we also test:

H_0 : Share options have no impact on Tobin's Q.

H_1 : Companies with a higher share option ratio will display higher levels of Tobin's Q.

The next set of hypotheses will test the impact on managerial decision making as defined by De Fusco et al. (1991) by testing for the performance ROA, as well as changes in dividend yield and changes in capital structure and financial leverage (DeFusco et al. 1991).

H₀: Share options have no impact on ROA.

H₁: Companies with higher share option ratio will show higher levels of ROA.

H₀: Share options have no impact on dividend yield.

H₁: Companies with a higher share option ratio will higher levels of dividend yield

H₀: Share options have no impact on gearing.

H₁: Companies with a higher share option ratio will display higher levels of gearing.

The five hypotheses presented above will allow one to investigate the impact and effectiveness of share options as part of executive compensation and in so doing address the main problem presented for this research report. It will also provide evidence to address the first sub-problem about incentive alignment for shareholder wealth creation and the second sub-problem about managerial decision making and the impact on company risk.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. Introduction

The purpose of this research is to investigate the impact of executive share options as part of executive compensation on company performance for listed companies in South Africa. To achieve this objective it will follow a correlation-based research approach as defined by Hofstee (2006) where the research will test the strength of the relationship between compensation and performance as confirmed in previous studies such as Agrawal and Mandelker (1987) and Jensen and Murphy (1990). This study will compare share options, as part of executive compensation, with company performance variables defined by specific criteria as demonstrated by DeFusco et al. (1990), DeFusco et al. (1991), Vogel and McGinnis (1999), Core et al. (1999), Guay (1999) and Klapper and Love (2004). Agrawal and Mandelker (1987) employ a ratio of dollar value of stock options held to total compensation and the proportion of total stock outstanding that is owned by senior managers as two of the determinants for management security holdings (Agrawal and Mandelker 1987). This particular method is appropriate in determining the concentration levels of share options in Rand terms for South African listed companies. The comprehensive variance analysis employed by DeFusco et al. (1990) will be simplified for the purpose of this research as it will ignore share options announcements and event orientated reporting (DeFusco et al. 1990). The research approach put forward by DeFusco et al. (1991) to measure managerial decision making and firm risk are also appropriate to be employed in this study to answer the issues raised in the second sub-problem. In their study DeFusco et al. (1991) looked at ROA, variance of ROA, debt/equity ratio and dividend yield as indicators and the results of managerial decision making (DeFusco et al. 1991). Core et al. (1999) and Vogel and McGinnis (1999) both employed ROA as a measure of firm performance. Jensen and Murphy (1990) provided a framework for shareholder wealth, which they applied in their study of pay performance sensitivity for over

2000 CEO's in three samples over a period of five decades (Jensen and Murphy 1990). Their definition for shareholder wealth indicated as the inflation-adjusted rate of return of ordinary shares, provides strong evidence of the appropriateness of this definition for shareholder wealth (Jensen and Murphy 1990). However, the more simplistic application of this method for share returns by Core et al. (1999), which ignore inflation adjustments will be more appropriate for the purpose of this research and will adequately address the main problem (Core et al. 1999).

The research will follow a framework in the realm of quantitative research as defined by Creswell (2003) and Neville (2005) and rely on statistical procedure to test the compensation performance relationship for South African listed companies (Creswell 2003; Neville 2005).

The research methodology, appropriateness of the method and the research design will follow in the sections below. It will include a brief overview of how the research methodology and design will be employed in terms of research instruments, data, and analysis. It will conclude with an overview of limitations and ethical considerations.

3.2. *Research Methodology*

The research methodology for this work is in the realm of quantitative research as defined by Leedy and Ormrod (2001) and Neville (2005) and will thus adopt a positivistic approach (Leedy and Ormrod 2001; Neville 2005). This methodology is appropriate as it allows for testing links and relationships and allow for a systematic statistical process (Neville 2005). It is evident from the literature that this method was widely used by several authors including Agrawal and Mandelker (1987); Jensen and Murphy (1990); DeFusco et al. (1991); Core and Guay (1999); Guay (1999); Garvey and Milbourn (2000); Brunello et al. (2001); Chhaochharia and Grinstein (2007); Duffhues and Kabir (2007).

3.3. *Validity and Reliability*

3.3.1 External Validity

The results of this study can be applied beyond executive compensation and company performance in the realm of management behaviour in the

presence of incentives, as done in previous studies by Heaton (2002) and Bolton, Scheinkman and Xiong (2006). It will also provide some indication on the effectiveness of corporate governance with reference to compensation committees on corporate boards.

3.3.2 Internal Validity

This study will eliminate other possible explanations for observed results by employing the methods of previous research studies that form the basis for the hypothesis put forward in section 2.5. This study is not an experimental design and therefore there are no large concern about internal validity as suggested by Leedy and Ormrod (2001).

3.3.3 Reliability

The research design will follow the methodologies employed by previous studies by Agrawal and Mandelker (1987), DeFusco et al. (1990), Vogel and McGinnis (1999) and Core et al. (1999) where the reliability of their methods has been confirmed through different statistical procedures which also tested the reliability of their conclusions.

3.3.4 Limitations and Ethical Consideration

One of the limitations pointed out by Albright et al. (2006) for correlation analysis is that it applies only to linear relationships (Albright et al. 2006) and one therefore need to guard against making hasty conclusions about such results.

This study will avoid reporting on the income of individuals and making any statements about individual performance. The results will be interpreted on the prescription of the research design and methodology would aim to avoid making any comments about individual performance and should not be considered in this context.

3.4. *Research Design*

The research design will employ hypothesis testing and multiple regression analysis as done in previous studies and discussed above. Hypothesis testing as employed by Agrawal and Mandelker (1987) provide the ability to

test for statistical significance. Different test measures are available to ensure the results of hypothesis testing can be accepted.

A statistical model for regression provides a framework where assumptions must be satisfied to make inferences from regression outputs and increase validity (Albright et al. 2006). This statistical method also provides several tests to confirm statistical significance and confidence levels. The research design will provide sufficient results to compile summary statistics that will allow industry analysis and therefore facilitate a process of making inferences about different sample sizes.

Share price performance as a measure of shareholder wealth will be measured as the cumulative average share price returns over a five year period. A regression analysis will be employed to test for correlations and summary and descriptive statistics will be used to explain all findings. The population will include all companies listed on the JSE while the sample includes more than 200 companies from the JSE.

The first method used to explore the problem will test for correlation between the respective variable and the share option concentration ratio. The relationships will be investigated through regression analysis and the equations that will be employed to test the hypotheses for share holder wealth as follows;

$$CAAR = \alpha_0 + \alpha_1 x + e_1 \quad (1)$$

where CAAR is calculated by $[(\text{Share price 2006}/\text{Share price 2001})^{(1/5)} - 1]$.

$$\text{Tobin's Q} = \beta_0 + \beta_1 x + e_2 \quad (2)$$

where Tobin's Q is the average over five years for [Market Capitalisation/Total Assets]

$$ROA = \gamma_0 + \gamma_1 x + e_3 \quad (3)$$

where ROA is the average over five years for [Net Profit/Total Assets]

$$\text{Dividend yield} = \lambda_0 + \lambda_1 x + e_4 \quad (4)$$

where dividend yield is the average over five years for [Dividend/Share price]

$$\text{Gearing} = \theta_0 + \theta_1 x + e_5 \quad (5)$$

where gearing is the average over five years for [Debt/Equity]

and x denotes the share option ratio and α_i , β_i , γ_i , λ_i and θ_i are coefficients and e_i are error terms. The share option ratio is employed as the independent variable for all the regression equations.

A two sample T-Test will then be employed to test for differences between the means of the performance variables for companies with higher levels of share option concentration and those with lower levels. Higher levels will be defined as any level above the sample mean share option ratio and lower levels as any level below the sample mean.

CHAPTER 4: THE DATA

4.1. *Population and Sample*

The population included all companies listed on the JSE. Only companies that have adopted the International Financial Reporting Standards with detailed compensation data for at least five years were part of the population.

Systematic sampling was used for this research as only the top 203 companies in terms of market cap were selected. A wide range of companies from different sectors were included in the sample.

4.2. *Data Source*

Compensation data was sourced from Who owns Whom a sub brand of BFA McGregor responsible for the annual publication with the same title with in-depth insight into ownership structures of South African companies. The dataset supplied was from their annual compensation survey for JSE listed companies. The data summary is listed in section 9.1 of the Appendix. BFA McGregor also provides data services to stock broking firms in South Africa on all listed securities on the JSE.

Total shares in issue, dividend yield, total equity, total debt, market capitalization, net profit after tax and closing prices were sourced from Sharenet. Sharenet is a company that specialises in share data services for asset managers, stockbrokers and corporates. The company's service has been in existence since 1988 and they provide 20 year historical databases. The use of cross-sectional data for this study is appropriate as it was also successfully employed by Brunello et al. (2001) in their study of executive compensation and company performance in Italy (Brunello et al. 2001).

4.3. *Data Summary*

The data for share options are not readily available from the JSE or any of the other stock exchange data services providers. Share options data was sourced from Who owns Whom, a company that does an annual survey on

executive compensation. The data for share options was extracted from a detailed executive remuneration survey which was used for the 2007 'Rich List' survey as published in the Sunday Times of 02 December 2007. This database was obtained from the company directly in its original format and permission was granted to extract share option data for use in this research project.

The share price, income statement and balance sheet data were sourced from Sharenet and was supplied through a fund manager that uses the Sharenet system. This data set included five years history starting in 2001 for all 203 companies for share price, net profit after tax, total assets, total debt, total equity, dividend yield and earnings yield. It also included the total shares in issue by December 2006.

4.4. Share Option Data

The share option data were extracted from the remuneration data for all JSE listed companies from 2003 to 2006. The share option data were used to compile the independent variable, the share option ratio. Share option data were extracted for all the companies that are part of the sample. The table below outlines the summary for the sample which shows that 55.7% of the companies in the sample employ share options as part of executive remuneration while 44.3% do not use share options as part of executive remuneration.

Table 1: Share Option Summary

Total Sample	Companies with Share Options	Companies without Share Options
203	113	90
Percentage split	55.7%	44.3%

Companies with share options were ranked from lowest to highest. The share option ratio is the ratio that is derived from the proportion of share options to total shares outstanding as of December 2006.

4.5. Variable Description

4.5.1 Share Option ratio

The share option ratio is the rand value of executive share options divided by the total number of shares in issue. This ratio is defined as the share option ratio and will be employed to distinguish share option concentration levels for the different companies that use share options as part of executive remuneration.

4.5.2 Cumulative Annual Average Returns

This variable is constructed from the historical share price data by calculating the cumulative average annual returns over five years. It is the cumulative return from 2001 until 2006 for each share included in the sample and is calculated as follows;

$[(\text{Share price 2006}/\text{Share price 2001})^{(1/5)} - 1]$.

4.5.3 Tobin's Q

Tobin's Q is constructed by dividing the market capitalisation by total assets. Tobin's Q is calculated for each year from 2001 until 2006 and the cumulative annual growth rate is observed as the change in Tobin's Q over this period.

4.5.4 Return on Assets

Return on Assets is constructed using the accounting definition and takes net profit after tax divided by total assets. The ROA is calculated for each year starting in 2001 and ending in 2006. The cumulative annual growth rate over the five years is observed as the change in ROA.

4.5.5 Dividend Yield

Dividend yield is calculated by taking the dividend for the year divided by the share price. The dividend yield for each share was taken directly from the Sharenet data source.

4.5.6 Debt/Equity Ratio

Financial Leverage is the ratio of debt to equity and this is calculated for each year. The average debt/equity ratio over five years is used to construct this variable.

The data summary of all the variables is listed in Table 2 below;

Table 2: Data Summary

Data Summary					
	CAAR	Average Tobin's Q	Average ROA	Average Dividend Yield	Average Debt/Equity
Count	203	203	203	203	203
Mean	0.2680296	1.512956	4.49E-02	2.72E-02	1.367724
Median	0.25	0.99	0.067	0.023	
Standard Deviation	0.2832678	2.55543	0.147429	2.81E-02	11.47291
Min	0.5	0.01	-1.014	0	-11.216
Max	1.07	27.48	0.315	0.13	161.697
Range	1.57	27.47	1.329	0.13	172.913

Data Summary - Share Options					
	CAAR	Average Tobin's Q	Average ROA	Average Dividend Yield	Average Debt/Equity
Count	113	113	113	113	113
Mean	0.281469	1.555124	6.30E-02	2.77E-02	0.5153363
Median	0.245	1.088	0.077	0.027	0.367
Standard Deviation	0.2893249	2.228777	0.120685	2.16E-02	1.163377
Min	-0.496	0.015	-0.795	0	-8.144
Max	1.074	21.555	0.237	0.111	5.43
Range	1.57	21.54	1.032	0.111	13.574

Data Summary - No Share Options					
	CAAR	Average Tobin's Q	Average ROA	Average Dividend Yield	Average Debt/Equity
Count	90	90	90	90	90
Mean	0.2516444	1.460211	2.21E-02	2.66E-02	2.437944
Median	0.2475	0.9115	0.0555	0.013	0.4415
Standard Deviation	0.2760789	2.925745	0.173375	3.47E-02	17.17458
Min	-0.418	0.021	-1.014	0	-11.216
Max	0.933	27.477	0.315	0.13	161.697
Range	1.351	27.456	1.329	0.13	172.913

The first section of the data table lists the summary statistics for all 203 companies for all the variables. The second section lists the summary

statistics for all companies with share options while the third section list those without share options.

The share option ratio was constructed as the independent variable for this study and employed in all the regression analysis. This was done for the 113 companies with share options. The summary statistics for this variable is listed in Table 3 below.

Table 3: Summary Statistics - Share Option Ratio

Data Summary - Share Option Ratio	
	Share Option Ratio
Count	113
Mean	0.0467344
Median	0.245
Standard Deviation	0.1636476
Min	0.000014
Max	1.5816
Range	1.581586

The wide range of provide evidence there is some extreme differences which is confirmed by a very low minimum of 0.00014% and a extremely high maximum of 158%. In the case of the extremely low share option ratio the value of the share options is only 22 000 with issued shares of 1,542,280,715. In the case of the extremely high share option ratio the value of the share options of 1 977 000 is much larger than the 1 250 000 issued shares.

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1. *Introduction*

The first section of chapter five describes the data summary of the share option ratio and examines the summary statistics for this variable. It continues with the regression output summary and then the t-test summary for each variable.

5.2. *Share option ratio analysis*

Additional analysis of the share option ratio provides evidence that the data is not normally distributed as shown in the histogram in Figure 1.

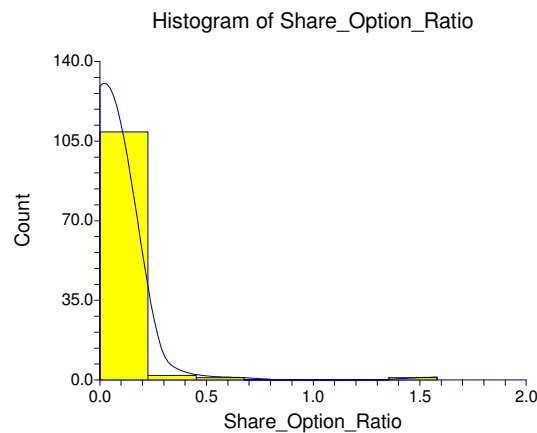


Figure 1: Histogram Share Option Concentration Ratio

The histogram in Figure 1 above plots the distribution of the share option ratio for this sample of 113 companies. The histogram does not have the symmetrical bell-shaped distribution expected for normally distributed data, suggesting that the normality assumptions may have been violated.

The non-normality of the share option concentration ratio calls for further investigation and we examine a box plot and the normal probability plot. The box plot in **Error! Reference source not found.** below shows that the data contains several outlier observations with values of the share option ratio much higher than the general distribution, as indicated by the dots above

the box plot. This confirms the positively skewed distribution shown in Figure 1 above.

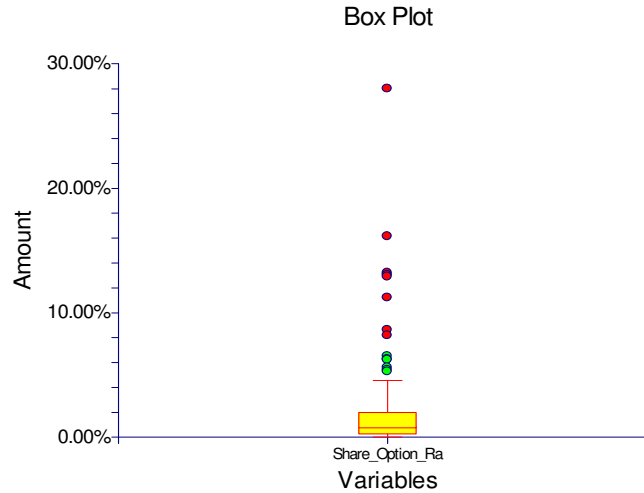


Figure 2: Share Option Ratio

5.3. Cumulative Annual Average Returns

The first hypothesis tests the relationship between the share option concentration ratio and Cumulative Annual Average Returns. The relationship modelled is given by equation 1 below;

$$CAAR = \alpha_0 + \alpha_1 x + e_1 \quad (1)$$

Where CAAR = Cumulative Annual Average Returns, and x = Share Option Ratio.

The results of the regression are listed in Table 4 below where companies with share options are denoted by CAAR_1.

Table 4: Regression Output - Share Option Concentration & CAAR

Dependent		CAAR_1				
Regression Equation Section						
Independent Variable	Regression Coefficient	Standard Error	T-Value (Ho: B=0)	Prob Level	Decision (5%)	Pow (5%)
Intercept	0.1429107	1.932399E-02	7.3955	0.000000	Reject Ho	1.00
Share_Option_Ratio	6.625365	0.4669263	14.1893	0.000000	Reject Ho	1.00
R-Squared	0.655101					
Regression Coefficient Section						
Independent Variable	Regression Coefficient	Standard Error	Lower 95% C.L.	Upper 95% C.L.	Standardized Coefficient	
Intercept	0.1429107	1.932399E-02	0.104599	0.1812224	0.0000	
Share_Option_Ratio	6.625365	0.4669263	5.699638	7.551092	0.8094	
T-Critical	1.982597					
Analysis of Variance Section						
Source	DF	Sum of Squares	Mean Square	F-Ratio	Prob Level	Power (5%)
Intercept	1	8.758056	8.758056			
Model	1	5.946352	5.946352	201.3367	0.000000	1.000000
Error	106	3.130643	2.953437E-02			
Total(Adjusted)	107	9.076995	8.483173E-02			
Root Mean Square Error		0.1718557	R-Squared	0.6551		
Mean of Dependent		0.2847685	Adj R-Squared	0.6518		
Coefficient of Variation		0.6034925	Press Value	3.366687		
Sum Press Residuals		14.59043	Press R-Squared	0.6291		

The sample intercept of 14.29% is the estimated value of CAAR_1 when the share option ratio is zero. The slope of 6.625 is the rate of change in CAAR resulting from a change in share option ratio. The p-values of the estimated coefficients are extremely low therefore we reject the null hypothesis of no linear relationship between CAAR and share option ratio with a high level of confidence.

The 95% confidence intervals indicate that when the share option ratio is zero CAAR_1 will be between 10.45% and 18.12%. Similarly the 95% confidence intervals for the coefficient of share option ratio indicate that it ranges from 5.69 and 7.55 95% of the time. None of the intervals contains the value zero which indicates that the intercept and the slope are significant at the 5% level. The R-Squared of 65.5% indicates that the fitted model explains 65.5% of the variability in CAAR_1.

The histogram of residuals is plotted in Figure 3 below. The histogram is negatively skewed which suggests that the normality assumption may have been violated by the data used to fit the relationship.

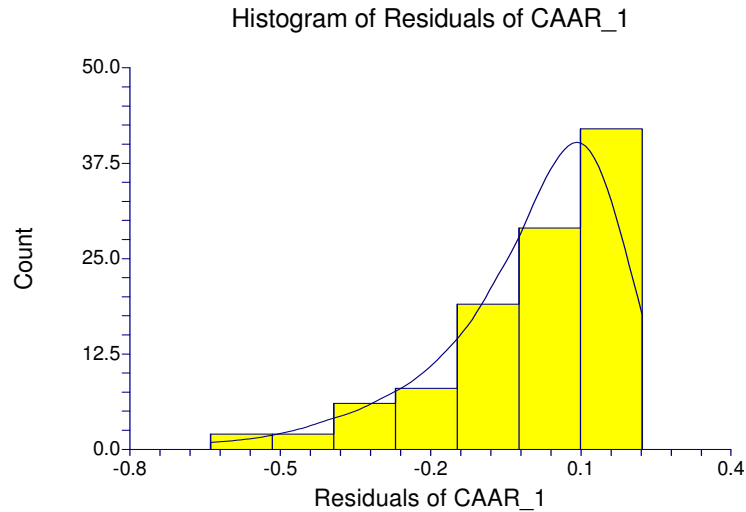


Figure 3: Histogram - Residuals of CAAR_1

The normality plot indicated in Figure 4 below also shows reason to doubt the normality assumptions for CAAR_1 at given combinations of share option ratio as not all the data points fall inside the curve lines.

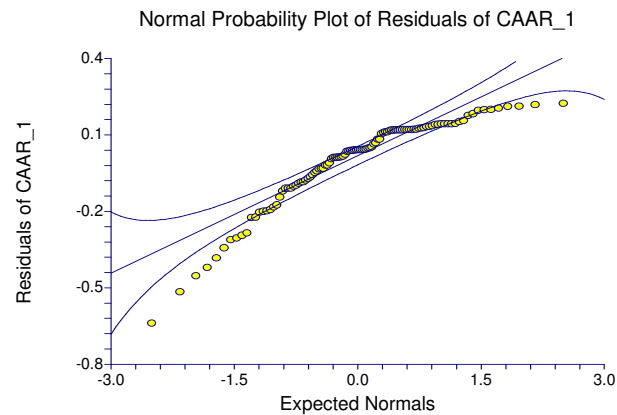
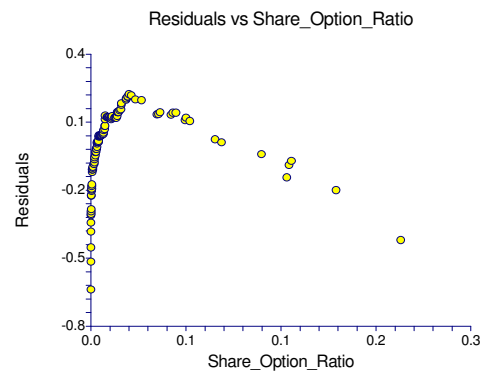
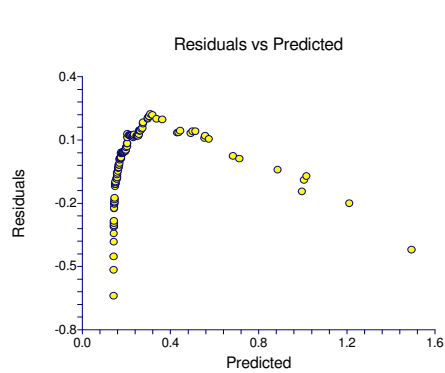


Figure 4: Normal Probability Plot of Residuals of CAAR_1

The plot of residuals against the predicted in Figure 5 and actual values in Figure 6 of share option ratio should show a random pattern under normality. However we observe a clear non-linear pattern suggesting that a non-linear relationship exists between the share option ratio and CAAR_1.



Despite the relatively high R Squared of the model and the fact that the parameter estimates were statistically significant at the 5% level, we cannot accept these results as conclusive. This is because the normality assumption of the regression model was violated and the residual plots suggest that future or additional research should look at a non-linear model for this relationship.

Differences in CAAR between companies with share option ratios below and above the mean share option ratio were also tested. The sample is therefore split between companies below and above the mean. The possibility of a significant statistical difference between the mean CAAR for companies with a share option concentration ratio below the mean and those above the mean of 4.67% was tested. In Table 5 we list basic summary statistics for share option ratio below and above the sample mean.

Table 5: Summary CAAR

The summary statistics reveal that 94 or 83.19% of companies have a share option ratio below the mean of 4.67%, while only 19 or 16.81% are above the mean. It also shows that companies with a share option ratio below the mean of have a mean CAAR of 27.04%. Companies with a share option ratio above the mean of have a mean CAAR of 33.31%. We also note that those below the mean have a higher standard deviation of 29.24% than those above the mean with a standard deviation of 28.11%. This provides contradictory evidence to most of what were find in the literature review where higher levels of share option concentration were associated with higher risk. The summary section of the T-Test is listed in Table 6 below;

Table 6: T-Test - CAAR Above and Below the share option ratio mean

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
CAAR_Below_Mean	94	0.2704255	0.2914588	3.01E-02	0.210729	0.3301221
CAAR_Above_Mean	19	0.3331579	0.281189	6.45E-02	0.1976291	0.4686866
Note: T-alpha (CAAR_Below_Mean) = 1.9858, T-alpha (CAAR_Above_Mean) = 2.1009						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	111	-6.27E-02	0.2898181	7.29E-02	-0.2071874	8.17E-02
Unequal	26.43	-6.27E-02	0.4049882	7.12E-02	-0.2089094	8.34E-02
Note: T-alpha (Equal) = 1.9816, T-alpha (Unequal) = 2.0539						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision -5%	Power (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	-0.8605	0.39135	Accept Ho	0.136631	0.042297	
Difference < 0	-0.8605	0.195675	Accept Ho	0.214892	0.069938	
Difference > 0	-0.8605	0.804325	Accept Ho	0.006207	0.000745	
Difference: (CAAR_Below_Mean)-(CAAR_Above_Mean)						

The 95% confidence limit for the difference between the means of the two groups ranges from a lower limit of -20% to an upper control limit of 0.08%, which includes the value zero indicating that the difference between the two means is not statistically significant at the 5% level. The p values are all above the alpha level of 0.05, leading us to accept the null hypothesis of zero difference. It must be noted that the power of this two tailed test is very

low, which indicates that there is a chance of wrongfully rejecting the alternative hypothesis. However, all assumptions about data normality were met which provides more evidence towards accepting the null hypothesis. One can therefore conclude that although there is a significant statistical relationship between the share option ratio and CAAR the results cannot be accepted as conclusive due to the violation of the normality assumptions. It is also evident from the T-Test that there is no significant statistical difference between companies with higher share option ratios and those with lower share option ratios.

5.4. *Tobin's Q*

The second hypothesis is another performance test and the relationship modelled is given by the equation 2 below;

$$\text{Tobin's } Q = \beta_0 + \beta_1 x + e_2 \quad (2)$$

Where Tobin's Q = Five year average of Total Assets/Market Capitalisation and x = share option ratio.

The results of the regression are listed in Table 7 below where companies with share options are denoted by Tobin's Q_1.

Table 7 : Tobin's Q Regression Output

Dependent		Tobin_s_Q_1				
Regression Equation Section						
Independent Variable	Regression Coefficient	Standard Error	T-Value (Ho: B=0)	Prob Level	Decision (5%)	Power (5%)
Intercept	0.4048345	0.1318748	3.0698	0.002720	Reject Ho	0.860362
Share_Option_Ratio	54.77366	3.186496	17.1893	0.000000	Reject Ho	1.000000
R-Squared	0.735972					
Regression Coefficient Section						
Independent Variable	Regression Coefficient	Standard Error	Lower 95% C.L.	Upper 95% C.L.	Standardized Coefficient	
Intercept	0.4048345	0.1318748	0.1433799	0.6662892	0.0000	
Share_Option_Ratio	54.77366	3.186496	48.45612	61.0912	0.8579	
T-Critical	1.982597					
Analysis of Variance Section						
Source	DF	Sum of Squares	Mean Square	F-Ratio	Prob Level	Power (5%)
Intercept	1	268.7965	268.7965			
Model	1	406.4195	406.4195	295.4723	0.000000	1.000000
Error	106	145.802	1.375491			
Total(Adjusted)	107	552.2215	5.160949			
Root Mean Square Error		1.172813	R-Squared	0.7360		
Mean of Dependent		1.577611	Adj R-Squared	0.7335		
Coefficient of Variation		0.7434108	Press Value	232.8149		
Sum Press Residuals		55.86436	Press R-Squared	0.5784		

The sample intercept of 40.48% is the estimated value of Tobin₁ when the share option ratio is zero. The slope of 54.77 is the rate of change in Tobin's Q resulting from a change in share option ratio. The p-values of the estimated coefficients are extremely low and therefore we reject the null hypothesis of no linear relationship between Tobin's Q and share option ratio with a high level of confidence.

The 95% confidence intervals indicate that when the share option ratio is zero Tobin's Q₁ will be between 14.33% and 66.62%. Similarly the 95% confidence intervals for the coefficient of share option ratio indicate that it ranges from 46.45 and 61.09 95% of the time. None of the intervals contains the value zero which indicates that the intercept and the slope are significant at the 5% level. The R-Squared of 73.5% indicates that 73% of variability in Tobin's Q is explained by the model estimated.

The histogram of residuals is plotted in Figure 8 below. It has a very long positively skewed tail which suggests that the normality assumptions may have been violated by the data used to fit the relationship.

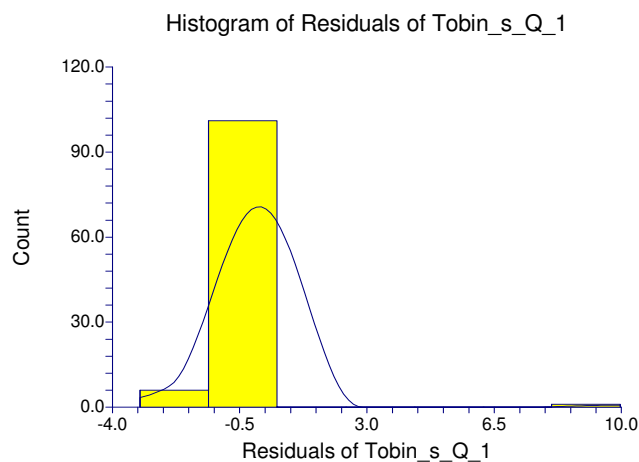


Figure 7: Histogram - Residuals Tobin's Q₁

The normality plot is shown in Figure 8 below. It shows reason to doubt the normality assumptions for Tobin's Q₁ at given combinations of share option ratio as not all the data points fall inside the curve lines.

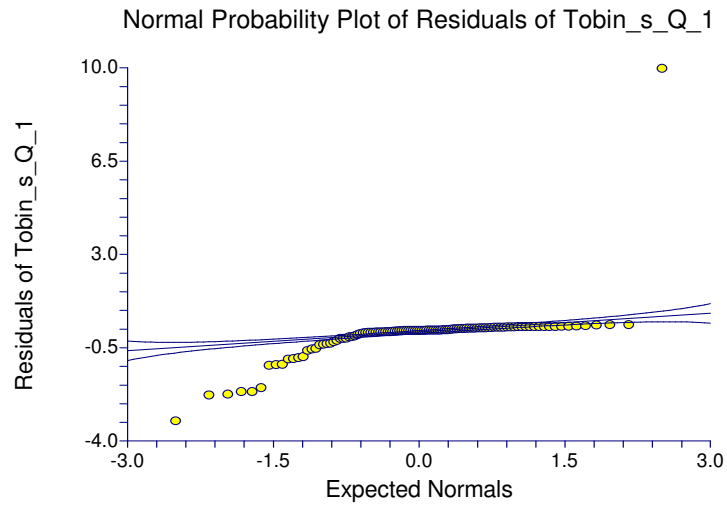


Figure 8: Normality Plot of Residuals of Tobin's Q

The residual plots in Figures 9 and 10 below should show a random pattern under normality. However we observe a clear non-linear pattern suggesting that a non-linear relationship exists between the share option ratio and Tobin's Q.

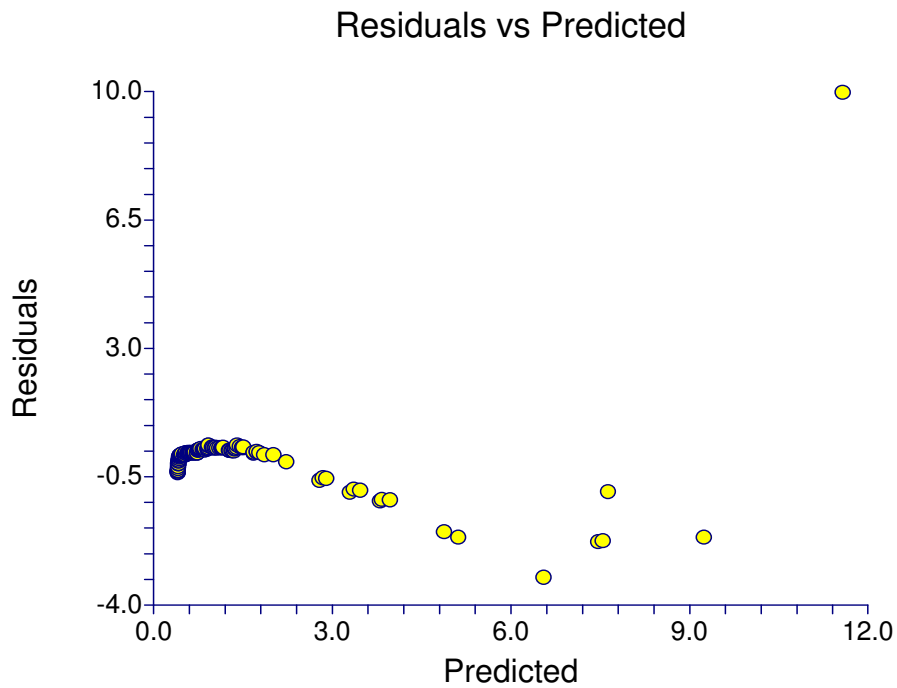


Figure 9: Residuals vs. Predicted

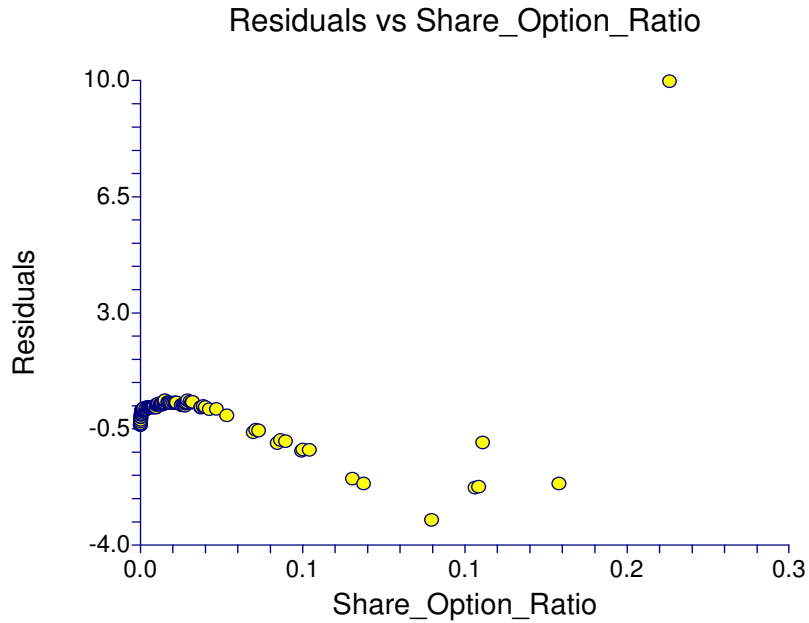


Figure 10: Residuals vs. Actual

Despite high R Squared of significance, one cannot accept these results as conclusive because the normality assumption of the regression model was violated. The residual plots suggest that future or additional research should look at a non-linear model for this relationship.

Differences in Tobin's Q between companies with share option ratios below and above the mean share option ratio were also tested. The sample is therefore split between companies below and above the share option ratio mean. The possibility of a significant statistical difference between the mean Tobin's for companies with a share option concentration ratio below the mean and those above the mean of 4.67% was tested. In Table 8 we list basic summary statistics for share option ratio below and above the sample mean.

Table 8 : T-Test Tobin's Q Above and below mean share option ratio

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Tobin_sQ_belowmean	94	0.1121255	0.2275435	2.35E-02	6.55E-02	0.1587309
Tobin_sQ_abovemean	19	0.3024421	0.5113645	0.1173151	5.60E-02	0.5489119
Note: T-alpha (Tobin_sQ_belowmean) = 1.9858, T-alpha (Tobin_sQ_abovemean) = 2.1009						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	111	-0.1903166	0.2928895	7.37E-02	-0.3363025	-4.43E-02
Unequal	19.46	-0.1903166	0.559705	0.1196396	-0.440322	0.0596889
Note: T-alpha (Equal) = 1.9816, T-alpha (Unequal) = 2.0897						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision -5%	Power (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	-2.5833	0.011086	Reject Ho	0.726058	0.487587	
Difference < 0	-2.5833	0.005543	Reject Ho	0.821904	0.589178	
Difference > 0	-2.5833	0.994457	Accept Ho	0.000013	0.000001	
Difference: (Tobin_sQ_belowmean)-(Tobin_sQ_abovemean)						

The T-Test results show that there the 94 companies with a share option ratio below the mean share option ratio of 4.67% which have mean Tobin's Q ratio of 11.21%. The 19 companies with a share option ratio above the mean share option ration of 4.67% have a higher mean Tobin's Q ratio of 30.24%. Companies above the mean display a higher standard deviation of 51.13%, which is 124% higher than the 22.75 standard deviation of companies below the mean share option concentration ratio. This corresponds with the findings from Guay (1999) presented in the literature review who founded that companies with higher levels of share options will show higher risk characteristics.

The 95% confidence limits show a lower control limit of -0.33 and an upper control limit of -0.044 and do not include the value zero. This indicates that there is a statistically significant difference between the two means. The two-tail hypothesis shows a p value of 0.01 which is lower than the chosen alpha level of 0.05 and confirms that there is a statistically significant difference between the two means as confirmed by the high power of the

two-tail test at 0.7260. Table 9 below indicates that the normality assumption is violated, therefore we consider the non-parametric Mann-Whitney U or Wilcoxon Rank-Sum Test

Table 9: Assumptions

Assumption	Value	Probability	Decision(5%)
Skewness Normality (Tobin_sQ_belowmean)	0.4793	0.631718	Cannot reject normality
Kurtosis Normality (Tobin_sQ_belowmean)	1.6406	0.100875	Cannot reject normality
Omnibus Normality (Tobin_sQ_belowmean)	2.9214	0.232074	Cannot reject normality
Skewness Normality (Tobin_sQ_abovemean)	4.6464	0.000003	Reject normality
Kurtosis Normality (Tobin_sQ_abovemean)	4.1229	0.000037	Reject normality
Omnibus Normality (Tobin_sQ_abovemean)	38.5876	0.000000	Reject normality
Variance-Ratio Equal-Variance Test	5.0505	0.000000	Reject equal variances
Modified-Levene Equal-Variance Test	1.9812	0.162060	Cannot reject equal variances

The results of the Mann-Whitney U or Wilcoxon Rank-Sum Test are listed in Table 10 below.

Table 10: Mann-Whitney U Test

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians								
Variable	Mann Whitney U	W Sum Ranks	Mean of W	Std Dev of W				
Tobin_sQ_belowmean	677.5	5142.5	5358	130.2572				
Tobin_sQ_abovemean	1108.5	1298.5	1083	130.2572				
Number Sets of Ties = 1, Multiplicity Factor = 6								
Alternative Hypothesis	Exact Probability Prob Level	Approximation Without Correction Decision -5%	Approximation With Correction Z-Value	Prob Level	Decision -5%	Z-Value	Prob Level	Decision -5%
Diff<>0			1.6544	0.098042	Accept Ho	1.6506	0.098824	Accept Ho
Diff<0			1.6544	0.049021	Reject Ho	1.6506	0.049412	Reject Ho
Diff>0			1.6544	0.950979	Accept Ho	1.6583	0.951367	Accept Ho

The two-tailed test indicates that we cannot reject the null hypothesis of a significant difference since the p-value of 0.09 is above the alpha level of 0.05. In this case the right-tail test has a p-value of 0.960 which is higher

than the chosen alpha level of 0.05 indicating that we cannot reject the null hypothesis of a positive difference in mean between the two groups. This confirms that there is a statistically significant difference in mean Tobin's Q between companies with Share Option Ratio above the mean and those with Share Option Ratio below the mean.

One can therefore conclude that although the estimated regression shows a statistically significant relationship between the share options ratio and Tobin's Q, the results are not conclusive due to the violation of the normality assumptions. However, the T-test shows conclusively that there is a statistically significant difference between the mean Tobin's Q of companies with a Share Option Ratio above the mean as compared to those with Share Option Ratio below the mean.

5.5. *Return on Assets*

The third hypothesis tests the relationship between the share option ratio and ROA. This relationship modelled is given by equation 3.

$$ROA = \gamma_0 + \gamma_1 x + e_3 \quad (3)$$

Where ROA = five year average Net Profit After Tax/Total Assets and x = Share Option Ratio.

The regression output is listed in Table 11 below

Table 11: Regression Output – ROA

Dependent	ROA_1					
Regression Equation Section						
Independent Variable	Regression Coefficient	Standard Error	T-Value (Ho: B=0)	Prob Level	Decision (5%)	Power (5%)
Intercept	5.866351E-02	1.383445E-02	4.2404	0.000048	Reject Ho	0.987510
Share_Option_Ratio	0.196046	0.3342823	0.5865	0.558808	Accept Ho	0.089504
R-Squared	0.003234					
Regression Coefficient Section						
Independent Variable	Regression Coefficient	Standard Error	Lower 95% C.L.	Upper 95% C.L.	Standardized Coefficient	
Intercept	5.866351E-02	1.383445E-02	3.123537E-02	8.609165E-02	0.0000	
Share_Option_Ratio	0.196046	0.3342823	-0.4667012	0.8587932	0.0569	
T-Critical	1.982597					
Analysis of Variance Section						
Source	DF	Sum of Squares	Mean Square	F-Ratio	Prob Level	Power (5%)
Intercept	1	0.4267641	0.4267641			
Model	1	5.206512E-03	5.206512E-03	0.3439	0.558808	0.089504
Error	106	1.604588	1.513763E-02			
Total(Adjusted)	107	1.609795	1.504481E-02			
Root Mean Square Error		0.1230351	R-Squared	0.0032		
Mean of Dependent		6.286111E-02	Adj R-Squared	0.0000		
Coefficient of Variation		1.957252	Press Value	1.64729		
Sum Press Residuals		7.091961	Press R-Squared	-0.0233		

The sample intercept of 0.05% is the estimated value of ROA when the share option ratio is zero. The slope of 0.196 is the rate of change in ROA resulting from one unit change in the share option ratio. The p-value for the share option ratio is greater than 0.05 therefore we accept the null hypothesis of no statistically significant linear relationship between share option ratio and ROA. The 95% confidence intervals include zero which further confirms that there is no statistically significant linear relationship between ROA and the share option ratio. The ANOVA is not significant leading us to conclude that the model estimated is not statistically significant which is also confirmed by the 0 adjusted R-Square. A T-test was performed to test for differences between the mean ROA for companies with a mean above and below the mean share option ratio. The results of the T-Test are listed in Table 12 below.

Table 12: T-Test ROA Below and above share option concentration ratio mean

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
ROA_Belowmean	94	-0.2490442	0.7814885	8.06E-02	-0.4091086	-0.0889799
ROA_abovemean	19	-0.5294809	1.163036	0.2668189	-1.090047	3.11E-02
Note: T-alpha (ROA_Belowmean) = 1.9858, T-alpha (ROA_abovemean) = 2.1009						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	111	0.2804367	0.8550072	0.2150643	-0.1457275	0.7066008
Unequal	21.4	0.2804367	1.401206	0.2787282	-0.29855	0.8594233
Note: T-alpha (Equal) = 1.9816, T-alpha (Unequal) = 2.0772						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision	Power -5% (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	1.304	0.194943	Accept Ho	0.252873	0.098366	
Difference < 0	1.304	0.902529	Accept Ho	0.001636	0.00015	
Difference > 0	1.304	0.097471	Accept Ho	0.363606	0.149584	
Difference: (ROA_Belowmean)-(ROA_abovemean)						

The difference section under equal variance for 95% confidence levels shows a lower control limit of -0.14 and an upper control limit of 0.70 and includes zero, which confirms that there is no statistically significant difference between the two means. All the p-values are above the alpha level of 0.05 so we accept the null hypothesis of no difference between the two means.

One can therefore conclude that there is no statistically significant linear relationship between the share option ratio and ROA as indicated by the regression equation. The T-tests also indicate that there is no statistically significant statistical difference between the mean ROA of companies with a share option ratio above the mean and those with a share option ratio below the mean.

5.6. Dividend Yield

The next hypothesis tests the relationship between share option ratio and the dividend yield. This relationship modelled is given by equation 4

$$\text{Dividend yield} = \lambda_0 + \lambda_1 x + e_4 \quad (4)$$

Where Dividend yield = Five year average dividend/share price and x =
Share Option Ratio

The regression output for this equation is listed in Table 13

Table 13: Regression Output - Dividend Yield

Dependent		DY_1				
Regression Equation Section						
Independent Variable	Regression Coefficient	Standard Error	T-Value (Ho: B=0)	Prob Level	Decision (5%)	Power (5%)
Intercept	0.0168666	1.249911E-03	13.4942	0.000000	Reject Ho	1.000000
Share_Option_Ratio	0.5247343	3.020165E-02	17.3744	0.000000	Reject Ho	1.000000
R-Squared	0.740112					
Regression Coefficient Section						
Independent Variable	Regression Coefficient	Standard Error	Lower 95% C.L.	Upper 95% C.L.	Standardized Coefficient	
Intercept	0.0168666	1.249911E-03	1.438853E-02	1.934467E-02	0.0000	
Share_Option_Ratio	0.5247343	3.020165E-02	0.4648565	0.584612	0.8603	
T-Critical	1.982597					
Analysis of Variance Section						
Source	DF	Sum of Squares	Mean Square	F-Ratio	Prob Level	Power (5%)
Intercept	1	8.528912E-02	8.528912E-02	301.8683	0.000000	1.000000
Model	1	3.730008E-02	3.730008E-02			
Error	106	0.0130978	1.235641E-04			
Total(Adjusted)	107	5.039788E-02	4.710082E-04			
Root Mean Square Error		1.111594E-02	R-Squared	0.7401		
Mean of Dependent		2.810185E-02	Adj R-Squared	0.7377		
Coefficient of Variation		0.395559	Press Value	1.373708E-02		
Sum Press Residuals		1.077683	Press R-Squared	0.7274		

The sample intercept of 1.68% is the estimated value of DY when the share option ratio is zero. The slope of 0.52 is the estimated rate of change in DY resulting from a change in share option ratio. The p-values of the estimated coefficients are extremely low. We therefore reject the null hypothesis of no linear relationship between DY and share option ratio with a high level of confidence.

The 95% confidence intervals indicate that when the share option ratio is zero DY will be between 0.014% and 0.019%. Similarly the 95% confidence intervals for the coefficient of share option ratio indicate that it ranges from 0.46 and 0.58 95% of the time. The intervals do not contain the value zero which indicates that the intercept and the slope are significant at the 5%

level. The R-Squared of 74.01% indicates that 74% of variability in DY is explained by the estimated model.

The histogram of residuals is plotted in Figure 11 below. It is not symmetrical and has a bimodal shape which suggests that the normality assumptions have been violated by the data used to fit the relationship.

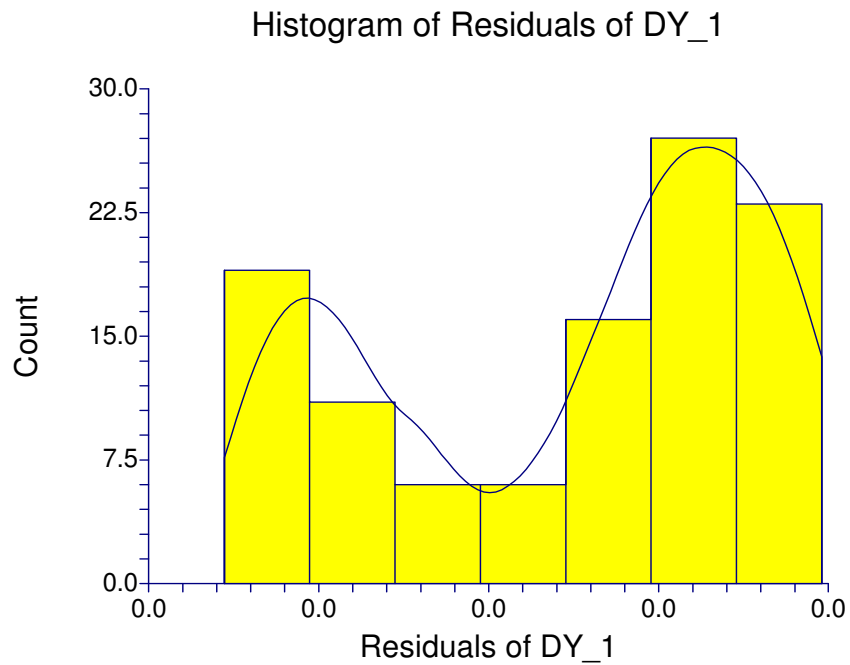


Figure 11: Histogram - Residuals of Dividend Yield

The histogram depicts a bimodal distribution suggesting that there are two groups defined by some underlying variable in terms of DY and share option ratio. This phenomenon provides a very interesting subject for further investigation and future research. The normality plot is shown in Figure 12 below.

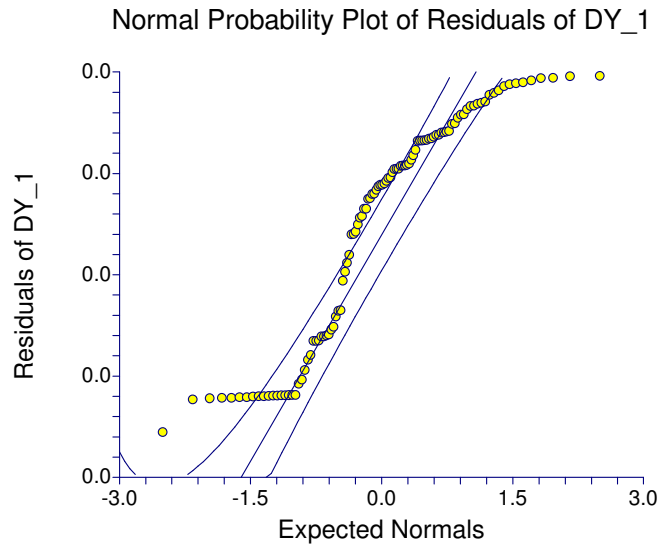


Figure 12: Normal Probability Plot of Residuals of DY

It shows that the normality assumption has been violated at given combinations of DY and Share Option Ratio. The plots of residuals against predicted value of share options ratio is shown in Figure 13, while the plot of residuals against actual values of share option ration is shown in Figure 14. Under normality one would expect a random pattern while it is evident that one can observe a bimodal relationship in both cases.

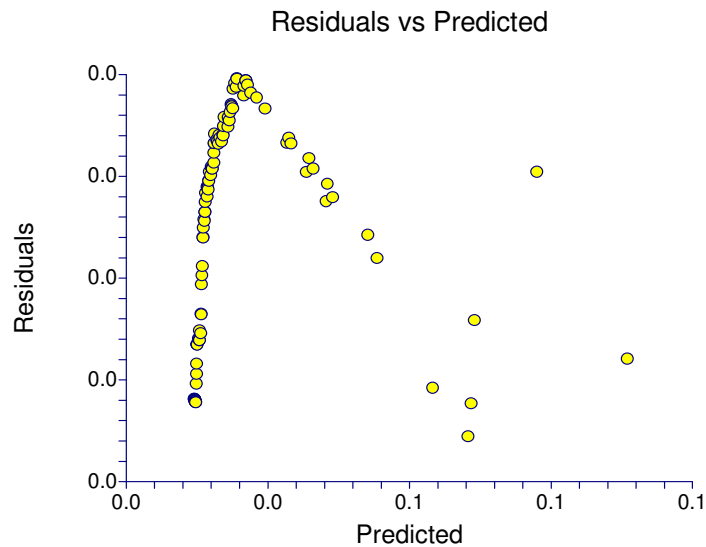


Figure 13: Residuals vs. Predicted

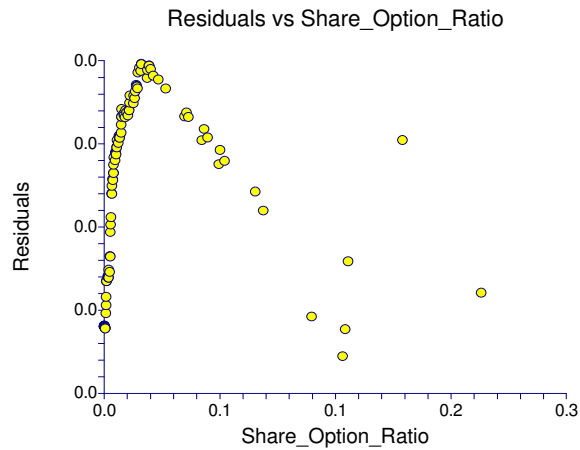


Figure 14: Residuals vs. Actual

One can conclude that although the regression output indicates a statistically significant relationship between DY and the share option ratio, it is not conclusive as the normality assumptions have been violated. The bimodal shape of the residuals suggests that further research should investigate what underlying variable causes this.

The differences between the means of company dividend yields for company's with share option ratio above and below the mean were also tested. The average dividend yield over a five year period was employed to construct this performance indicator. The summary results of the T-Test are listed in Table 14 below.

Table 14: T-Test Dividend Yield - Above and Below share option ratio mean

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
DY__Belowmean	94	2.71E-02	2.18E-02	2.25E-03	2.26E-02	3.16E-02
DY_Abovemean	19	0.0308421	2.10E-02	4.81E-03	2.07E-02	0.0409488
Note: T-alpha (DY__Belowmean) = 1.9858, T-alpha (DY_Abovemean) = 2.1009						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	111	-3.75E-03	2.16E-02	5.45E-03	-1.45E-02	7.04E-03
Unequal	26.46	-3.75E-03	3.02E-02	5.31E-03	-1.47E-02	7.16E-03
Note: T-alpha (Equal) = 1.9816, T-alpha (Unequal) = 2.0538						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision	Power -5% (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	-0.688	0.492917	Accept Ho	0.104755	0.029413	
Difference < 0	-0.688	0.246458	Accept Ho	0.168254	0.049807	
Difference > 0	-0.688	0.753542	Accept Ho	0.009939	0.001324	
Difference: (DY__Belowmean)-(DY_Abovemean)						

The 95% confidence limit of the differences between the two means range from a lower limit of -0.01 to a higher limit of 0.01. This includes zero indicating that there is no statistically significant difference between the two means. The p-values in the Equal Variance section are all above the 0.05 alpha level pointing to acceptance of the null hypothesis.

One therefore conclude that although there is evidence of a statistically significant relationship between the share option ratio and the dividend yield, the results cannot be accepted as conclusive due to the unexplained bimodal distribution observed in the residuals. It is also evident from the T-Test that there is no statistically significant difference between the mean dividend yield of companies with share option ratio above the mean compared to those with share option ratio below the mean.

5.7. Debt / Equity Ratio

The final hypothesis looks at the relationship between gearing levels and share option ratio. This relationship is modelled and given by equation 5.

$$\text{Gearing} = \theta_0 + \theta_1 x + e_5 \quad (5)$$

Where Gearing = The five year average Debt/Equity ratio and x = Share Option Ratio.

The regression output is listed in Table 15 below.

Table 15: Regression Output – Gearing

Dependent		Debt_Equity_1				
Regression Equation Section						
Independent Variable	Regression Coefficient	Standard Error	T-Value (Ho: B=0)	Prob Level	Decision (5%)	Power (5%)
Intercept	-8.345171E-04	9.102785E-02	-0.0092	0.992703	Accept Ho	0.050009
Share_Option_Ratio	24.41038	2.199509	11.0981	0.000000	Reject Ho	1.000000
R-Squared	0.537457					
Regression Coefficient Section						
Independent Variable	Regression Coefficient	Standard Error	Lower 95% C.L.	Upper 95% C.L.	Standardized Coefficient	
Intercept	-8.345171E-04	9.102785E-02	-0.1813061	0.179637	0.0000	
Share_Option_Ratio	24.41038	2.199509	20.04964	28.77112	0.7331	
T-Critical	1.982597					
Analysis of Variance Section						
Source	DF	Sum of Squares	Mean Square	F-Ratio	Prob Level	Power (5%)
Intercept	1	29.40844	29.40844	123.1679	0.000000	1.000000
Model	1	80.71981	80.71981			
Error	106	69.46859	0.655364			
Total(Adjusted)	107	150.1884	1.40363			
Root Mean Square Error	0.8095456	R-Squared	0.5375			
Mean of Dependent	0.5218241	Adj R-Squared	0.5331			
Coefficient of Variation	1.551376	Press Value	71.52071			
Sum Press Residuals	22.82618	Press R-Squared	0.5238			

The sample intercept of -0.001% is the estimated value of Debt/Equity when the share option ratio is zero. The slope of 24.41 is the rate of change in Debt/Equity resulting from a change in share option ratio. The p-value of the estimated coefficient for the share option ratio is extremely low and

therefore one can reject the null hypothesis of no linear relationship between Debt/Equity and share option ratio with a high level of confidence. The p-value of the estimate of the intercept is higher than the chosen alpha level indicating that the gearing level is estimated to be 0 when the Share Option Ratio is 0.

The 95% confidence intervals for the coefficient of share option ratio indicate that it ranges from 20.04 and 28.77 95% of the time. The interval for the intercept includes the value zero which indicates that the intercept is not significant at the 5% levels, while the slope does not include zero and is significant at the 5% level. The R-Squared of 53.75% indicates that 53% of variability in Debt/Equity is explained by the model estimated.

The histogram of the residuals is shown in Figure 19 below. The data is negatively skewed indicating that the normality assumption may have been violated.

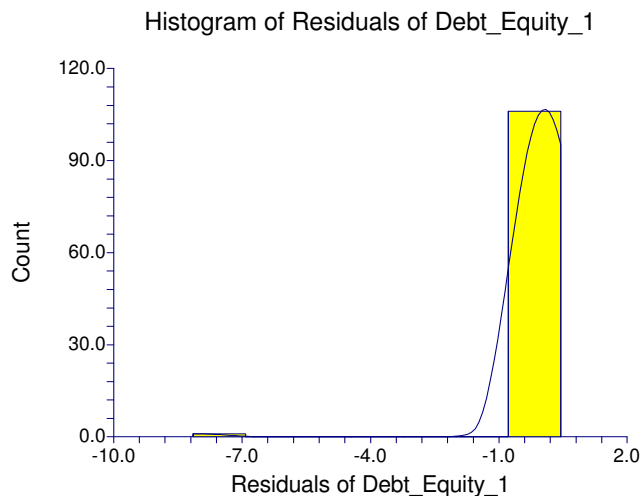


Figure 15: Histogram of Residuals - Debt / Equity

The normality plot shown in Figure 16 below also indicates that the data is not normally distributed as many of the data points fall outside the curved lines.

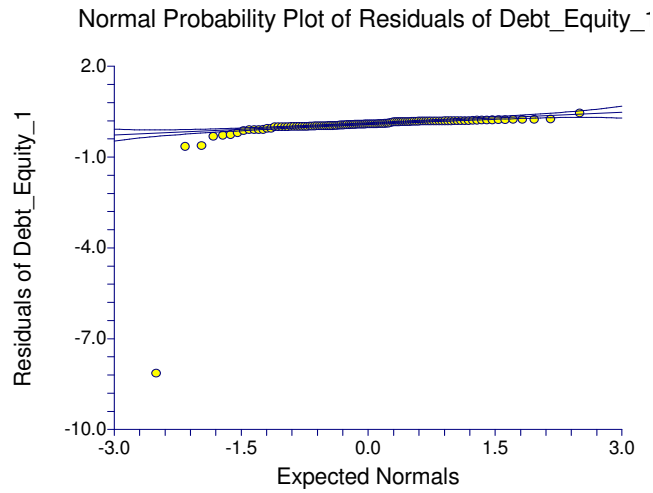


Figure 16: Normal Probability Plot

The residual plots in Figures 17 and 18 are expected to show a random pattern under normality. However, we observe a clear linear pattern suggesting that the assumption of random errors has also been violated.

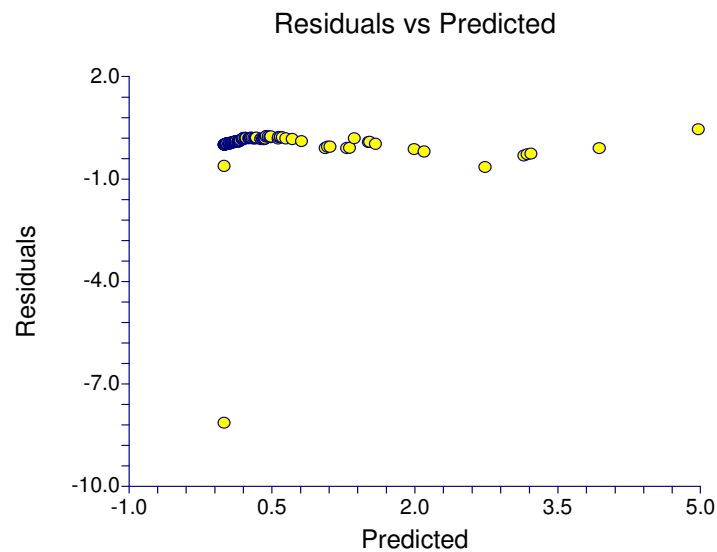


Figure 17: Residuals vs. Predicted

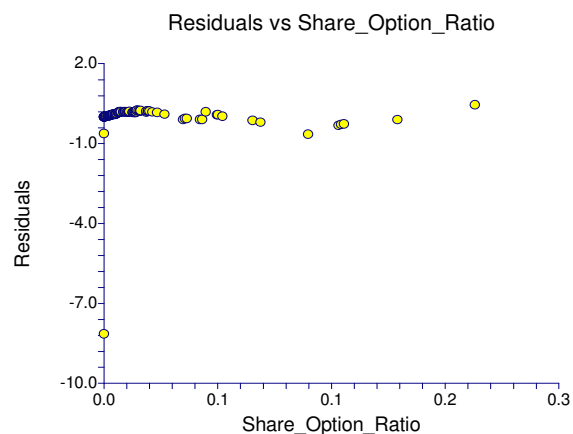


Figure 18: Residuals vs. Actuals

The results can therefore not be accepted as conclusive due to the violation of the normality assumptions.

The differences in the mean gearing between companies below and above the mean share option ratio were also tested. The average debt/equity ratio over five years was used to construct this variable. The summary of the T-Test is listed in Table 16 below.

Table 16: T-Test Gearing

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Gearing_Belowmean	94	0.5115106	1.216779	0.1255012	0.2622902	0.7607311
Gearing_Abovemean	19	0.5342631	0.8783315	0.2015031	0.1109209	0.9576054
Note: T-alpha (Gearing_Belowmean) = 1.9858, T-alpha (Gearing_Abovemean) = 2.1009						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	111	-2.28E-02	1.168574	0.2939372	-0.6052088	0.5597038
Unequal	33.69	-2.28E-02	1.500672	0.2373901	-0.5053496	0.4598446
Note: T-alpha (Equal) = 1.9816, T-alpha (Unequal) = 2.0329						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision	Power -5% (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	-0.0774	0.93844	Accept Ho	0.050675	0.010217	
Difference < 0	-0.0774	0.46922	Accept Ho	0.05845	0.012228	
Difference > 0	-0.0774	0.53078	Accept Ho	0.042554	0.008135	
Difference: (Gearing_Belowmean)-(Gearing_Abovemean)						

The confidence limits for the difference between the two groups include zero therefore we conclude that there is no difference. Under equal variance and 95% confidence levels, the lower control limit of -0.6052 average gearing to 0.5597 contains the value zero which confirms that there is no statistically significant difference between the two means. All the p-values are above the 0.05 alpha levels therefore we accept the null hypothesis of zero difference.

One can conclude that although there is evidence of a statistically significant relationship between the share option ratio and the debt/equity, the violation of normality assumptions does not allow us to accept the results as conclusive. The T-Tests indicate that there is no statistically significant difference between the mean gearing ratio of companies with share option ratio above the mean compared to those with share option ratio below the mean.

CHAPTER 6: SECONDARY T-TEST

6.1. Introduction

In chapter six the results of a secondary t-test is discussed. It includes all the variables and include details of the summary statistics. The entire sample of 203 companies was examined to test for differences in the means between companies with share options and companies without share options. A T-Test to test was employed to test whether there is a significant statistical difference in the means of CAAR, ROA, Tobin's Q, Dividend Yield and Gearing between companies with share options and those without.

6.2. CAAR

The differences between the means of CAAR for companies with share options and those without were examined. The summary output of the T-Test is listed in Table 17 below where companies with share options are denoted by CAAR_1 and those without share options denoted as CAAR_0.

Table 17: T- Test CAAR

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
CAAR_1	113	0.281469	0.2893249	0.0272174	0.2275412	0.3353968
CAAR_0	90	0.2516444	0.2760789	2.91E-02	0.1938208	0.309468
Note: T-alpha (CAAR_1) = 1.9814, T-alpha (CAAR_0) = 1.9870						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	201	2.98E-02	0.2835361	4.01E-02	-4.87E-02	0.108338
Unequal	194.52	2.98E-02	0.3999105	3.98E-02	-4.88E-02	0.1084094
Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9722						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision -5%	Power (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	0.7445	0.457429	Accept Ho	0.114881	0.033533	
Difference < 0	0.7445	0.771285	Accept Ho	0.008671	0.001153	
Difference > 0	0.7445	0.228715	Accept Ho	0.185319	0.058389	
Difference: (CAAR_1)-(CAAR_0)						

The confidence limits for the difference between the two groups includes zero therefore we conclude that there is no difference. Under equal variance and with 95% confidence levels the differences range from -0.05% CAAR to

an upper limit of 10.83% CAAR and include the value zero. This confirms that there is no statistically significant difference between the mean CAAR for companies with share options and those without.

6.3. *Tobin's Q*

The second test examines the difference between the mean Tobin's Q ratio between companies with share options and those without. The summary output of the T-Test is listed in Table 18 below where TobinsQ_1 denotes companies with share options and TobinsQ_0 companies without any share options.

Table 18: T-Test Tobin's Q

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Tobin_s_Q_1	113	1.555124	2.228777	0.2096657	1.139698	1.97055
Tobin_s_Q_0x	90	1.460211	2.925745	0.3084006	0.8474258	2.072996
Note: T-alpha (Tobin_s_Q_1) = 1.9814, T-alpha (Tobin_s_Q_0x) = 1.9870						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	201	9.49E-02	2.560893	0.3618086	-0.6142191	0.8040446
Unequal	162.67	9.49E-02	3.677965	0.3729217	-0.6414788	0.8313044
Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9747						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision -5%	Power (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	0.2623	0.793337	Accept Ho	0.057844	0.012573	
Difference < 0	0.2623	0.603332	Accept Ho	0.028797	0.005105	
Difference > 0	0.2623	0.396668	Accept Ho	0.084431	0.020307	
Difference: (Tobin_s_Q_1)-(Tobin_s_Q_0x)						

The confidence limits for the difference in mean between the two groups include zero therefore we conclude that there is no significant difference. Under equal variance and with 95% confidence levels the differences range from -6.14% Tobin's Q to an upper limit of 80.4% Tobin's Q and includes the value zero. This confirms that there is no statistically significant difference between the mean Tobin's Q for companies with share options and those without.

6.4. ROA

The third test looks at the differences between the mean ROA of companies with share options and those without. The same sample of 203 is used for this T-Test and the summary output is listed in Table 19 below.

Table 19: T-Test ROA

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
ROA_1	113	0.063018	0.120685	1.14E-02	4.05E-02	8.55E-02
ROA_0x	90	2.21E-02	0.173375	1.83E-02	-1.42E-02	5.84E-02
Note: T-alpha (ROA_1) = 1.9814, T-alpha (ROA_0x) = 1.9870						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	201	4.10E-02	0.146374	2.07E-02	4.19E-04	8.15E-02
Unequal	152.86	4.10E-02	0.211243	2.15E-02	-1.55E-03	8.35E-02
Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9756						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision -5%	Power (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	1.9802	0.049043	Reject Ho	0.504346	0.270295	
Difference < 0	1.9802	0.975478	Accept Ho	0.000153	0.00001	
Difference > 0	1.9802	0.024522	Reject Ho	0.631672	0.366573	
Difference: (ROA_1)-(ROA_0x)						

Unequal and equal variance tests below give different results. The assumptions section of the T-test reveal that the data is not normally distributed which casts doubt on the validity of the application of the results from the t-test under equal variance. The assumptions section is listed in Table 20 below.

Table 20 : Assumptions Section

Tests of Assumptions Section			
Assumption	Value	Probability	Decision(5%)
Skewness Normality (ROA_1)	-9.5084	0.000000	Reject normality
Kurtosis Normality (ROA_1)	7.1619	0.000000	Reject normality
Omnibus Normality (ROA_1)	141.7013	0.000000	Reject normality
Skewness Normality (ROA_0x)	-7.6789	0.000000	Reject normality
Kurtosis Normality (ROA_0x)	5.9634	0.000000	Reject normality
Omnibus Normality (ROA_0x)	94.5278	0.000000	Reject normality
Variance-Ratio Equal-Variance Test	2.0638	0.000298	Reject equal variances
Modified-Levene Equal-Variance Test	2.3456	0.127207	Cannot reject equal variances

Normality is rejected, therefore we test for the difference using the non-parametric Mann-Whitney U Test. The results of the Mann Whitney test are listed in Table 21 below.

Table 21: Mann Whitney Test – ROA

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians								
Variable	Mann Whitney U	W Sum Ranks	Mean of W	Std Dev of W				
ROA_1	6103.5	12544.5	11526	415.7831				
ROA_0x	4066.5	8161.5	9180	415.7831				
Number Sets of Ties = 46, Multiplicity Factor = 696								
Alternative Hypothesis	Exact Probability		Approximation Without Correction			Approximation With Correction		
	Prob	Decision	Prob	Decision	Prob	Decision		
	Level	(5%)	Z-Value	Level	(5%)	Z-Value	Level	
Diff<>0			-2.4496	0.014302	Reject Ho	-2.4484	0.014350	Reject H
Diff<0			-2.4496	0.992849	Accept Ho	-2.4508	0.992873	Accept H
Diff>0			-2.4496	0.007151	Reject Ho	-2.4484	0.007175	Reject H

The Mann Whitney test indicates a positive differences between the two means . This confirms that there is a statistically significant difference between the mean ROA for companies with share options and those without.

6.5. Dividend Yield

The fourth test looks at the differences between the mean dividend yield between companies with and without share options for the same sample. A T-Test was employed and the summary output is listed in Table 22 below.

Table 22: T- Test Dividend Yield

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
DY_1	113	2.77E-02	2.16E-02	2.03E-03	2.37E-02	3.18E-02
DY_0x	90	2.66E-02	3.47E-02	3.65E-03	1.93E-02	3.38E-02
Note: T-alpha (DY_1) = 1.9814, T-alpha (DY_0x) = 1.9870						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	201	1.16E-03	2.81E-02	3.98E-03	-6.63E-03	8.95E-03
Unequal	141.77	1.16E-03	4.08E-02	4.18E-03	-7.11E-03	9.42E-03
Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9768						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision -5%	Power (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	0.2915	0.770982	Accept Ho	0.059695	0.013191	
Difference < 0	0.2915	0.614509	Accept Ho	0.026938	0.004694	
Difference > 0	0.2915	0.385491	Accept Ho	0.089021	0.02177	
Difference: (DY_1)-(DY_0x)						

When one examine the test assumptions section it is evident that normality is not met and it would not be prudent to accept the results presented under equal variance. The assumptions section revealed that normality assumptions have been violated and is listed in Table 23 below.

Table 23: Assumptions Section

Tests of Assumptions Section			
Assumption	Value	Probability	Decision(5%)
Skewness Normality (DY_1)	3.8089	0.000140	Reject normality
Kurtosis Normality (DY_1)	2.8573	0.004273	Reject normality
Omnibus Normality (DY_1)	22.6716	0.000012	Reject normality
Skewness Normality (DY_0x)	4.9337	0.000001	Reject normality
Kurtosis Normality (DY_0x)	2.4056	0.016146	Reject normality
Omnibus Normality (DY_0x)	30.1286	0.000000	Reject normality
Variance-Ratio Equal-Variance Test	2.5761	0.000003	Reject equal variances
Modified-Levene Equal-Variance Test	6.2806	0.013000	Reject equal variances

The non-parametric Mann-Whitney U test is employed to test the difference in means and the results are listed in Table 24 below.

Table 24: Mann-Whitney U test

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians								
Variable	Mann Whitney U	W Sum Ranks	Mean of W	Std Dev of W				
DY_1	6025	12466	11526	412.6362				
DY_0x	4145	8240	9180	412.6362				
Number Sets of Ties = 39, Multiplicity Factor = 126834								
Alternative Hypothesis	Exact Probability		Approximation Without Correction			Approximation With Correction		
	Prob Level	Decision (5%)	Z-Value	Prob Level	Decision (5%)	Z-Value	Prob Level	Decision (5%)
	Diff<>0		-2.2780	0.022724	Reject Ho	-2.2768	0.022797	Reject Ho
	Diff<0		-2.2780	0.988638	Accept Ho	-2.2792	0.988674	Accept Ho
	Diff>0		-2.2780	0.011362	Reject Ho	-2.2768	0.011398	Reject Ho

The p-values of the two-tailed test and the right one-tail test are below the alpha level of 0.05 resulting in the rejection of the null hypothesis under the Mann Whitney test which leads to the conclusion that there is a significant statistical difference between the means of the two groups.

6.6. Debt / Equity Ratio

The last test looks at the difference between the mean debt to equity ratio for companies with share options against those without. The results of the T-Test are listed in Table 25 below.

Table 25: T-Test Debt-Equity

Descriptive Statistics Section						
Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Debt_Equity_1	113	0.5153363	1.163377	0.1094413	0.2984925	0.7321801
Debt_Equity_0x	90	2.437944	17.17458	1.81036	-1.159202	6.035091
Note: T-alpha (Debt_Equity_1) = 1.9814, T-alpha (Debt_Equity_0x) = 1.9870						
Confidence-Limits of Difference Section						
Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	201	-1.922608	11.46129	1.619276	-5.096332	1.251115
Unequal	89.65	-1.922608	17.21394	1.813665	-5.525961	1.680745
Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9868						
Equal-Variance T-Test Section						
Alternative Hypothesis	T-Value	Prob Level	Decision -5%	Power (Alpha=.05)	Power (Alpha=.01)	
Difference <> 0	-1.1873	0.2365	Accept Ho	0.219034	0.081103	
Difference < 0	-1.1873	0.11825	Accept Ho	0.32493	0.129539	
Difference > 0	-1.1873	0.88175	Accept Ho	0.002396	0.000244	
Difference: (Debt_Equity_1)-(Debt_Equity_0x)						

The confidence limits of the differences range from a lower limit of -5.09 an upper limit 1.25 which includes the value zero. The p-values are all above the chosen alpha level of 0.05 resulting in the acceptance of the null hypothesis. This means that there is no significant statistical difference between the means of the two groups.

CHAPTER 7: CONCLUSION

The impact of share options on company performance was investigated by looking at various indicators. A share option ratio was constructed and used to test the relationship of share options between five different performance variables. The first three variables, CAAR, Tobin's Q and ROA were employed as the generic proxy for performance. CAAR was constructed as a compounded annual average over a period a five year period while Tobin's Q and ROA was constructed by using the average over five years. Dividend yield and the Debt/Equity ratio were used as a proxy for managerial decision making. These two variables were also constructed using the five year average. The share option ratio was employed as the independent variable for all the regression analysis.

In addition to this the sample of companies with share options were split above and below the mean share option ratio and a T-Test was employed to test for differences between the means for all five variables. A secondary T-Test was then employed to test for differences between the means of companies with share options and those without.

For the first performance variable CAAR it was found that there is a significant statistical relationship between the share option ratio and CAAR. However, the results of this relationship cannot be accepted as conclusive due to the violation of the normality assumptions and a clear non-linearity in the patterns of the residuals. The T-Test that was employed to examine the differences between the mean of companies above and below the mean share option ratio revealed that there was no significant statistical difference between the two groups.

Secondly, the relationship between the share option ratio and Tobin's Q was examined. Although a significant statistical linear relationship was found the results cannot be accepted as conclusive due to the violation of the normality assumptions. The T-test which looked at the differences between the mean Tobin's Q for companies above and below the share option mean, confirmed a significant statistical difference in Tobin's Q between the two groups.

The third performance variable was the average ROA over five years and the relationship between ROA and share option ratio was examined. No evidence of a significant statistical relationship was found and the ANOVA suggested that the model employed to estimate the relationship was not significant. The T-Test provided additional confirmation when it was found that there was no significant statistical difference in ROA between companies with a higher mean share option ratio and those with a lower share option ratio.

The relationship between dividend yield and the share option ratio was examined as a proxy for management decision making. Although we found a significant statistical relationship the bimodal distribution of the residuals suggest that there are two groups defined by some underlying variable in terms of DY and share option ratio. The results can therefore not be accepted as conclusive. It was also found that there is no statistical significant difference in the mean dividend yield between companies with higher levels of share options and companies with lower levels of share options.

The last element examined the relationship between debt/equity ratio and the share option ratio. Although there was evidence of a significant statistical relationship the violation of the normality assumptions do not allow one to accept the results as conclusive. The results of the T-test revealed that there are no significant statistical difference in the debt/equity ratio between the means of companies with higher and companies with lower share option ratios.

A secondary T-test was employed to test for the differences in the mean CAAR, Tobin's Q, ROA, Dividend Yield and Debt/Equity between companies with share options and those without. For CAAR we found no significant statistical difference between the mean CAAR of companies with share options and companies without share options. Similarly it was found that there is no significant statistical difference in the mean Tobin's Q between companies with or without share options.

For ROA there was a significant statistical difference between the mean ROA for companies with share options against those without. There was also evidence of a significant statistical difference between the mean

dividend yield between companies with and without share options. Lastly there was no evidence of a significant statistical difference in debt/equity between companies with or without share options.

This research investigated the impact of share options on company performance in South Africa. It found evidence of a statistical significant relationship in four of the five variables with the exception of ROA. None of these relationships can be considered as conclusive due the violation of normality assumptions, which pave the way for future research with better fitted data. Only one of the variables showed evidence of a difference between the mean for companies above and below the mean share option ratio. This statistical significant difference was found in Tobin's Q. The secondary T-Test revealed that for two of performance indicators, defined in this research as CAAR, Tobin's Q there were no significant statistical difference between the means for companies with and companies without share options. Only one of the performance variables, ROA showed evidence of a significant statistical difference between the two means. The two decision making variables, Dividend Yield and Debt/Equity ratio, as defined by this research report, showed opposite results. While there was evidence of a significant statistical difference in Dividend Yield between companies with share options and those without, there was no difference for Debt/Equity ratio. The impact of share options on company performance in South Africa is perhaps not as influential as in other developed markets.

7.1. *Future Research*

Although there was evidence of a significant linear relationship between share options and all the variables employed in the research most of the results and findings cannot be taken as conclusive due to the violation of most of the normality assumptions. Future research should therefore look at non linear data to test the robustness of such relationships with the hope of finding more conclusive results. In particular the phenomenon found to cause the bimodal distribution of residuals for dividend yield requires additional investigation. Future research should also examine the changes

and variability of performance and risk associated with early exercising of stock options.

The impact of risk and variability of risk associated with share options held by management on ordinary share holders should also be examined in more detail. This research report ignored the share option vesting period, share option expiry dates and management behaviour around the timing of these events which also require in depth analysis. Future research should also consider if there is a relationship between the lifecycle of the CEO's contract and share options and at what point share options become more influential in terms of management

REFERENCES

- Abdullah, S. N. (2006) Directors' remuneration, firm's performance and corporate governance in Malaysia among distressed companies, *Corporate Governance*, 6(2), p. 162 - 174.
- Agrawal, A. and Mandelker, G. N. (1987) Managerial Incentives and Corporate Investment and Financing Decisions, *The Journal of Finance*, XLII(4), p. 823 - 837.
- Ashley, A. S. and Yang, S. S. M. (2004) Executive compensation and earnings persistence, *Journal of Business Ethics*, 50, p. 369 - 382.
- Baker, T., Collins, D. and Reitenga, A. (2003) Stock Option Compensation and Earnings Management Incentives, *Journal Of Accounting, Auditing & Finance*, p. 557 - 582.
- Berglof, E. and Pajuste, A. (2005) What do firms disclose and why? Enforcing corporate governance and transparency in central and eastern Europe *Oxford Review of Economic Policy*, 21(2), p. 178 - 197.
- Bolton, P., Scheinkman, J. and Xiong, W. (2006) Executive compensation and short-termist behaviour in speculative markets, *Review of Economic Studies*, 73, p. 577 - 610.
- Brazel, J. F. and Webb, E. (2006) CEO compensation and the seasonal equity offering decision, *Managerial and decision economics*, 27, p. 363 - 378.
- Brown, L. D. and Caylor, M. L. (2006) Corporate Governance and firm valuation, *Journal of Accounting and Public Policy*, 25, p. 409 - 434.
- Brunello, G., Graziano, C. and Parigi, B. (2001) Executive compensation and firm performance in Italy, *International Journal of Industrial Organization*, 19, p. 133 - 161.
- Chakraborty, A., Kazarosian, M. and Trahan, E. A. (1999) Uncertainty in Executive Compensation and Capital Investment: A Panel Study, *Financial Management*, 28(4), p. 126 - 139.
- Chen, J. (2001a) Ownership structure as corporate governance mechanism: Evidence from Chinese listed companies, *Economics of Planning*, 34(1), p. 54 - 72.

- Chen, J. (2001b) Ownship structure as corporate governance mechanism: Evidence from Chinese Listed Companies, *Economics of Planning*, 34, p. 53 - 72.
- Cheng, Q. and Warfield, T. D. (2005) Equity incentives and earnings management, *The Accounting Review*, 80(2), p. 441 - 476.
- Chhaochharia, V. and Grinstein, Y. (2007) Corporate Governance and Firm Value: The Impact of the 2002 Governance Rules, *The Journal of Finance*, LXII(4), p. 1789 - 1825.
- Core, J. and Guay, W. (1999) The use of equity grants to manage optimal equity incentive levels, *Journal of Accounting and Economics*, 28, p. 151 - 184.
- Core, J. E., holthausen, R. W. and Larcker, D. F. (1999) Corporate governance, chief executive officer compensation, and firm performance, *Journal of Financial Econmics*, 51, p. 371 - 406.
- Creswell, J. W. (2003) *Research Design Qualitative, Quantitative, and mix methods approaches*, Sage Publications, Inc., California.
- Datta, S., Iskandar-datta, M. and Raman, K. (2005) Executive Compensation and corporate equity financing decisions, *Journal of Business*, 78(5), p. 1859 - 1889.
- DeFusco, R. A., Johnson, R. R. and Zorn, T. S. (1990) The Effect of Executive Stock Option Plans on Stockholders and Bondholders, *The Journal of Finance*, XLV(2), p. 617 - 627.
- DeFusco, R. A., Zorn, T. S. and Johnson, R. R. (1991) The Association Between Executive Stock Option Plan Changes and Managerial Decision Making, *Financial Management*, 20(1), p. 36 - 43.
- Duffhues, P. and Kabir, R. (2007) Is the pay-performance relationship always positive? Evidence from the Netherlands, *Journal of Multinational Financial Management* p. 1 - 16.
- Dutta, S. (2003) Capital Budgeting and Managerial Compensation: Incentive and Retention Effects, *The Accounting Review*, 78(1), p. 71 - 93.
- Farber, D. B. (2005) Restoring trust after Fraud: Does Corporate Governance Matter?, *The Accounting Review*, 80(2), p. 539 - 561.
- Frier, C., Ross, S. A., Westerfield, R. W. and Jordan, B. D. (2004) *Fundamentals of corporate finance*, Third ed., McGraw-Hill.

- Garvey, G. T. and Milbourn, T. T. (2000) EVA versus Earnings: Does It Matter Which Is more Highly Correlated with Stock Returns?, *Journal Of Accounting Research*, 38, p. 209 - 245.
- Guay, W. R. (1999) The sensitivity of CEO wealth to equity risk:an analysis of the magnitude and determinants, *Journal of Financial Econmics*, 53, p. 43 - 71.
- Guo, W.-C., Shiah-hou, S.-R. and Yang, Y.-W. (2006) Stock bonus compensation and firm performance in Taiwan, *Managerial Finance*, 32(11), p. 862 - 885.
- Hall, B. J. and Murphy, K. J. (2002) Stock options for undiversified executives *Journal of Accounting and Economics*, 33, p. 3 - 42.
- Hallock, K. F. (1998) Layoffs, Top Executive Pay, and Firm Performance, *The American Economic Review*, 88(4), p. 711 - 723.
- Harris, D. G. and Livingstone, J. R. (2002) Federal Tax Legislation as an Implicit Contracting Cost Benchmark: The Definition of Excessive Executive Compensation, *The Accounting Review*, 77(4), p. 997 - 1018.
- Haugen, R. A. and Senbet, L. W. (1981) Resolving the Agency Problems of External Capital through Options, *Journal of Finance*, XXXVI(3), p. 629 - 647.
- Heaton, J. B. (2002) Managerial optimism and corporate finance, *Financial Management*(Summer 2003), p. 33 - 45.
- Hermalin, B. E. and Wallace, N. E. (2001) Firm performance and executive compensation in the savings and loan industry, *Journal of Financial Econmics*, 61, p. 139 - 170.
- Himmelberg, C. P., Hubbard, R. G. and Palia, D. (1999) Understanding the determinants of managerial ownership and the link between ownship and performance, *Journal of Financial Economics*, 53, p. 353 - 384.
- hofstee, E. (2006) *Constructing a good dissertation*, EPE, Sandton.
- Hull, J. C. (2006) *Options, Futures, and Other Derivatives*, Sixth ed., Pearson, New Jersey.

- Jensen, M. C. and Meckling, W. H. (1976) Theory of the firm: Managerial behaviour, agency cost and ownership structure, *Journal of Financial Economics*, 3, p. 305 - 360, last accessed 1976.
- Jensen, M. C. and Murphy, K. J. (1990) Performance Pay and Top-Management Incentives, *The Journal of Political Economy*, 98(2), p. 225 - 264.
- Kato, T., Kim, W. and Lee, J. H. (2007) Executive compensation, firm performance, and Chaebols in Korea: Evidence from new panel data, *Pacific-Basin Finance Journal*, 15, p. 36 - 55.
- Kato, T. and Long, C. (2006) Executive Compensation, Firm Performance, and Corporate Governance in China: Evidence from Firms listed in the Shanghai and Shenzhen Stock Exchanges, pp. 945 - 983,
- Klapper, L. F. and Love, I. (2004) Corporate governance, investor protection, and performance in emerging markets, *Journal of Corporate Finance*, 10, p. 703 - 728
- Klinger, S., Hartman, C., Anderson, S. and Cavanagh, J. (2002) Executive Excess 2002 Ninth Annual CEO Compensation Survey, *Institute for Policy Studies*(1 - 26).
- Leedy, P. D. and Ormrod, J. E. (2001) *Practical Research Planning and design*, Pearson.
- McGuinness, J. F. (2002) Impact of Sarbanes-Oxley Act on Benefits and Executive Compensation, *Journal of Deferred Compensation*, p. 55 - 68.
- Mohan, N. and Ruggiero, J. (2007) Influence of firm performance and gender on CEO compensation, *Applied Economics*, 39, p. 1107 - 1113.
- Murphy, K. J. (1995) Executive Compensation and the Modern Industrial Revolution, *Workshop on Managerial Compensation, Strategy, and Firm Performance*, University of Southern California, Humboldt-University Berlin.
- Neville, C. (2005) Introduction to research methods, University of Bradford, School of Management

- Okeahalam, C. C. (2004) Corporate governance and disclosure in Africa: Issues and challenges, *Journal of Financial Regulation and Compliance*, 12(4), p. 359 - 370.
- S. Albright, Winston, W. L. and Zappe, C. (2006) *Data Analysis and Decision Making*, Third ed., Thomson, Mason.
- Vogel, T. J. and McGinnis, J. D. (1999) Executive Long-Term Performance Contracts: An empirical Analysis of Market Risk, Investment Opportunities and Leverage in the Post-Adoption Period, *Managerial Finance*, 25(10), p. 76 - 93.
- Weir, C. and Laing, D. (2001) Governance structures, director independence and corporate performance in the UK, *European Business Review*, 13(2), p. 86 - 94
- Yeo, G. H. H., Chen, S.-S., Ho, K. W. and Lee, C.-f. (1999) Effects of Executive Share Option Plans on Shareholder Wealth and Firm Performance: The Singapore Evidence, *The Financial Review*, 34, p. 1 - 20.

APPENDIX

Share Option Data

Share Codes	Share Name	Share Options	YES = 1 , NO = 0
ABL	Abil	1840000	1
ABO	Absolute		0
ADH	Advtech	16998388	1
ADR	Adcorp	1977000	1
ADW	African Dawn		0
AEC	Anbeeco		0
AEG	Aveng	2868750	1
AFE	AECI	328600	1
AFG	Afgem		0
AFO	Afgold	5860479	1
AFR	Afgri	11484100	1
AFX	Afrox	52000	1
AGI	AGI	6775000	1
AGL	Anglo plc	6504	1
ALJ	Alljoy	0	0
ALT	Altech	344012	1
AMA	Amap	1953530	1
AMS	Angloplats	139842	1
ANG	Anglogold	329085	1
AOO	Af & Over		0
APK	Astrapak	6509711	1
APN	Aspen	1600100	1
ARI	Arm	3678022	1
ARL	Astral	419316	1
ART	Argent	1942528	1
ASR	Assore		0
ATN	Altron	2708261	1

AWT	Awethu		0
BAW	Barloworld	749903	1
BCF	Bowcalf		0
BDM	Buildmax		0
BEG	Beige		0
BEL	Bell	90600	1
BIC	Bicaf		0
BIL	Billiton	1461647	1
BJM	BJM		0
BNT	Bonatla		0
BRN	Brimstone -N-		0
BRT	Brimstone	4659980	1
BSB	Busby		0
BSR	Basil Read		0
BVT	Bidvest	3598533	1
CAE	Capemp		0
CAT	Cat		0
CCL	Compuclear		0
CDZ	Cadiz	5600000	1
CKS	Crookes	10000	1
CLH	City Lodge	323000	1
CMA	Command Holdings		0
CMG	Cenmag		0
CMH	CMH	692000	1
CNL	Control	4950000	1
CNX	Conafex		0
COL	Colliers		0
COM	Comair	6767293	1
CPL	Capital		0
CRG	Cargo		0
CRM	Ceramic		0
CRW	Corwil		0

CSB	Cashbuild		0
CUL	Cullinan		0
DAW	Dawn		0
DCT	Datacentrix	1275000	1
DDT	Didata	9600795	1
DEC	Decillion		0
DEL	Delta	22000	1
DGC	Digicor	2713000	1
DLV	Dorbyl		0
DON	Don Group		0
DST	Distell	877608	1
DTC	Datatec	2785008	1
DYM	Dynamic		0
ELR	ELB Group		0
ENV	Enserv		0
EOH	EOH	3137500	1
ERM	ERM		0
EUR	Eureka		0
EXL	Excell		0
FBR	FamBrands		0
FOS	Foschini	3825200	1
FRT	Faritec	4610000	1
FSR	Firststrand	7852813	1
GDF	Goldreef	1940000	1
GFI	GFields	950850	1
GIJ	Gijima		0
GLL	Glovil		0
GMB	Glenmib	997500	1
GND	Grindrod	12450000	1
GRF	Group 5	932500	1
GRT	Growthpoint		0
HAL	Halogen		0
HAR	Harmony	501091	1

HCI	HCI	1150000	1
HDC	Hudaco	586667	1
HVL	Highveld	75000	1
HWN	Howden		0
HYP	Hyprop		0
IDI	Idion	6922500	1
IDQ	Indeqty		0
ILA	Iliad		0
ILV	Illovo	4219300	1
IMP	Implats	123549	1
INL	Investec	49374	1
IPL	Imperial	305000	1
ITE	Itlile	135000	1
ITG	Integrear		0
ITR	Intrading		0
IVT	Invicta		0
JDG	JD Group	3155000	1
JNC	Johnnic	845404	1
JSC	Jasco		0
KGM	KG Media	1579195	1
KIR	Kairos		0
KLG	Kelgran		0
KNG	Kingco		0
KWV	KWV Bel		0
LAB	Labat		0
LAF	Lonafric		0
LBT	Liberty Int Plc	373145	1
LNF	Lonfin		0
LON	Lonmin	726283	1
MAS	Masnite	90000	1
MCU	mCubed	4478000	1
MDC	Mediclinic	40000	1
MET	Metropolitan		0

MFL	Metrofile		0
MMG	MicroMega	640000	1
MNY	Moneyweb		0
MOB	Mobile		0
MPC	Mr Price	1045751	1
MRF	Merafe	40140000	1
MSM	Massmart		0
MST	Mustek	4115000	1
MTA	Metair	11445	1
MTE	Martell		0
MTN	MTN	5510900	1
MTP	Marriott		0
MTX	Metorex	4300000	1
MTZ	Matodzi		0
MUR	M & R	6108750	1
NCL	New Clicks	2505000	1
NCS	Nictus		0
NED	Nedcor	935143	1
NHM	Northam		0
NPK	Nampak	4130200	1
NPN	Naspers		0
NTC	Netcare	9910000	1
NWL	Nu-World		0
OCE	Oceana	982194	1
OCT	Octodec		0
OLG	Onelogix		0
OMN	Omnia	130000	1
PAL	Pals		0
PAM	Palamin		0
PAP	Panprop		0
PCN	Paracon		0
PFN	Propfin		0
PGR	Pergrin	96000	1

PIK	Pick 'n Pay	7544434	1
PMM	Premium		0
PMV	PrimeServe	2935000	1
PNC	Pinnacle		0
PPC	PP Cement	393001	1
PPR	Putprop		0
PWK	Pikwik	1751800	1
RAH	Ra-Hold	743756	1
RBW	Rainbow	4875657	1
RCH	Richemont		0
RDF	Redefine		0
REM	Remgro	2269258	1
RLO	Reunert	613500	1
RMH	RMBH		0
RNG	Randgold		0
RTO	Rex Trueform	374798	1
SAB	SABMiller	3534833	1
SAL	Sallies		0
SAM	Samroc		0
SAP	Sappi	633000	1
SBK	Stanbank	2185900	1
SBL	Sable		0
SBV	Sabvest		0
SER	Seardel		0
SHF	Steinhoff	11084622	1
SHP	Shoprite		0
SIM	Simm	29500000	1
SKJ	Sekunjalo		0
SLL	Stella		0
SMR	Samrand		0
SOL	Sasol	1506200	1
SOV	Sovfood		0
SPA	Spanjrd		0

SPG	Super Group	7370285	1
SPS	Spescom	1000000	1
SQE	SquareOne		0
STI	Stilfontein		0
STO	Setpoint		0
SUI	Sun Int	1044062	1
SUR	Spurcorp	4391000	1
SYC	Sycom		0
TBS	Tiger Brands	1287900	1
TBX	Thabex		0
TDH	Tradehold	1000000	1
TIW	Tiwheel	850000	1
TMT	Trematon		0
TPC	Transpac	1360	1
TRE	Trencor	3000000	1
TRT	Tourvest	6108600	1
TRU	Truworths	5797000	1
TSX	Transhex	102700	1
UCS	UCS	2000000	1
VLE	Value	4831250	1
VTL	Ventel		0
WBO	Wbhovco		0
WES	Wesco		0
WHL	Woolworths	17560442	1
WNH	Winhold		0
YRK	Yorkcor		0
ZCI	ZCI		0
ZPT	Zaptronix		0

Share Data – Sharenet

Share Code s	Share Name	Issued Shares 2006	Closing price Dec 2001	Closing price Dec 2002	Closing price Dec 2003	Closing price Dec 2004	Closing price Dec 2005	Closing price Dec 2006
ABO	Absolute	739 708 207	15	9	2	8	4	1
ADH	Advtech	393 664 886	26	40	84	120	210	310
ADR	Adcorp	43 382 095	935	630	180	690	400	000
AEC	Anbeeco	14 978 039	6	5	2	6	4	68
AEG	Aveng	396 145 908	780	1 000	889	200	799	360
AFE	AECI	117 545 718	1 720	2 550	3 400	3 900	5 300	6 825
AFG	Afgem	257 622 321	141	201	150	65	41	22
AFO	Afgold	473 889 600	8	33	26	71	190	307
AFR	Afgri	373 794 000	499	563	565	700	549	737
AGI	AGI	203 276 047	335	275	170	278	278	475
AGL	Anglo plc	1 517 413 104	18 320	12 650	14 300	13 350	21 370	34 200
ALJ	Alljoy	41 973 333	20	20	49	70	85	40
ALT	Altech	105 854 231	2 230	2 400	3 120	4 655	5 000	6 200
AMA	Amap	212 189 689	52	105	265	585	510	640
ANG	Anglogold	276 236 153	21 100	29 050	31 399	19 901	31 400	32 999
AOO	Af & Over	1 250 000	320	400	451	475	715	600
APK	Astrapak	135 131 250	300	380	730	165	350	359
APN	Aspen	387 476 328	600	770	240	830	340	245
ARL	Astral	43 224 669	1 360	1 560	2 845	6 100	7 700	11 650
ATN	Altron	97 174 115	806	875	100	660	350	530
BAW	Barloworld	200 739 725	5 860	6 080	7 015	10 630	11 053	16 400
BDM	Buildmax	41 805 634	27	17	16	55	137	123

BEL	Bell	94 816 900	940	955	780	620	950	2 600
BIL	Billiton	2 468 147 002	6 150	4 505	5 800	6 600	10 390	12 895
BRN	Brimstone - N-	218 181 503	32	56	120	170	377	685
BRT	Brimstone	41 507 955	28	58	137	155	380	725
BSB	Busby	57 946 971	75	130	180	370	600	1 000
BSR	Basil Read	71 081 322	95	175	146	102	340	1 260
CAE	Capemp	231 071 629	16	6	9	16	66	148
CAT	Cat	494 939 628	2 400	580	800	970	1 594	1 595
CDZ	Cadiz	239 809 524	180	155	235	339	421	490
CLH	City Lodge	42 419 153	870	1 680	2 730	3 525	4 350	6 656
CMG	Cenmag	9 600 000	10	8	8	8	8	8
CMH	CMH	106 052 700	272	234	342	761	1 540	1 800
CPL	Capital	401 234 900	240	195	243	336	432	479
CRG	Cargo	20 000 000	125	240	305	500	750	1 000
CRM	Ceramic	18 263 543	6 100	7 720	6 150	9 100	12 200	14 350
CSB	Cashbuild	25 805 347	385	900	2 080	3 375	4 379	4 900
DAW	Dawn	189 275 545	45	56	170	550	705	1 256
DCT	Datacentrix	205 265 684	90	131	179	260	265	380
DDT	Didata	1 542 280 715	1 440	381	450	420	451	600
DEC	Decillion	203 698 992	155	105	90	35	14	15
DEL	Delta	49 165 553	5 510	4 900	3 840	3 430	3 250	2 200
DGC	Digicor	202 355 477	29	20	47	155	264	421
DLV	Dorbyl	34 070 056	1 850	2 780	2 160	2 400	1 275	1 420
DST	Distell	199 759 504	1 020	1 450	1 525	2 500	3 200	4 350
DTC	Datatec	155 241 192	2 030	675	1 375	1 010	2 000	3 315

EOH	EOH	72 093 988	112	158	196	420	480	670
FOS	Foschini	240 498 241	720	140	965	000	210	740
GDF	Goldreef	220 602 659	240	275	601	265	470	060
GFI	GFields	552 550 818	5	11	9	6	11	13
			750	990	550	950	180	275
GIJ	Gijima	964 666 538	2	270	95	54	53	75
			300					
GMB	Glenmib	292 128 302	240	218	325	404	235	158
GND	Grindrod	468 626 210	102	140	238	790	150	560
GRF	Group 5	100 100 964	450	755	965	515	105	550
HAR	Harmony	398 678 495	7	14	10	5	8	11
			850	700	850	120	490	120
HCI	HCI	125 723 190	270	230	350	200	750	900
HDC	Hudaco	32 501 083	1	1	2	3	4	6
			200	720	125	270	250	100
HVL	Highveld	99 148 098	1	1	1	4	8	7
			600	735	530	800	480	799
HWN	Howden	65 729 109	69	82	150	220	490	400
IDQ	Indeqty	12 170 000	90	100	120	120	65	40
ILV	Illovo	348 745 100	820	810	695	775	1	1
							280	980
IMP	Implats	555 054 680	7	6	7	5	11	18
			030	813	250	988	650	400
IPL	Imperial	209 617 979	5	5	6	10	14	16
			640	500	700	400	060	399
ITE	Ittile	821 800 452	86	145	164	307	391	473
ITG	Integrear	12 564 190	61	50	50	50	50	20
IVT	Invicta	75 693 792	301	540	740	1	1	2
						400	445	900
JDG	JD Group	178 500 000	2	2	4	6	7	7
			600	075	200	780	665	955
JNC	Johnnic	166 470 398	4	4	1	2	1	1
			440	551	330	175	200	125
LAF	Lonafric	157 572 088	170	130	110	150	2	600
LBT	Liberty Int Plc	362 772 673	8	7	8	10	10	19
			450	879	000	550	800	033
LON	Lonmin	144 007 599	17	12	13	9	17	41
			500	000	000	900	750	160

MAS	Masnite	7 035 558	570	1 206	1 310	1 375	1 630	2 500
MCU	mCubed	750 000 000	51	23	37	49	39	24
MDC	Mediclinic	394 338 449	710	788	1 290	1 425	1 800	2 520
MMG	MicroMega	97 969 569	285	115	76	200	296	370
MRF	Merafe	2 341 569 564	65	95	75	76	61	75
MSM	Massmart	201 050 105	1 275	1 830	3 050	4 529	5 165	7 020
MST	Mustek	109 090 732	325	510	728	950	970	917
MTA	Metair	151 645 250	234	500	580	712	920	1 140
MTE	Martell	13 440 000	1 480	1 480	1 450	1 400	1 450	1 800
MTN	MTN	1 860 268 283	1 320	1 225	2 845	4 350	6 215	8 530
MTX	Metorex	297 816 239	370	310	235	265	720	1 620
MTZ	Matodzi	370 547 286	13	55	40	64	78	35
MUR	M & R	331 892 619	730	1 270	1 370	1 375	1 960	4 010
NCL	New Clicks	355 957 242	639	700	786	950	870	1 100
NPK	Nampak	654 757 561	1 180	1 415	1 300	1 565	1 684	2 174
NPN	Naspers	321 058 936	1 970	2 360	4 152	7 500	11 201	16 600
NTC	Netcare	1 829 898 055	290	311	506	505	752	1 381
OCE	Oceana	116 790 557	1 350	1 450	1 700	1 490	1 555	1 650
RAH	Ra-Hold	371 757 625	420	455	280	380	505	510
RBW	Rainbow	282 060 930	325	320	505	750	895	1 390
RCH	Richemont	5 220 000 000	2 180	1 590	1 551	1 880	2 745	4 090
RDF	Redefine	811 196 990	245	270	300	330	575	695
REM	Remgro	448 802 207	6 500	6 190	7 060	9 436	12 200	17 801
RLO	Reunert	195 621 876	1 930	1 975	2 180	3 750	5 260	8 175
RMH	RMBH	1 187 808 570	1 115	1 024	1 307	2 176	2 790	3 340

RNG	Randgold	74 813 128	1 070	2 425	3 775	1 100	890	890
RTO	Rex Trueform	2 905 805	300	400	390	455	720	710
SAB	SABMiller	1 501 217 923	7 900	6 080	6 801	9 545	11 775	16 044
SBL	Sable	8 420 000	400	650	545	1 200	1 450	3 000
SBV	Sabvest	17 326 549	180	200	200	220	310	600
SIM	Simm	1 004 986 635	15	26	24	21	105	494
SPG	Super Group	404 843 109	910	618	930	1 280	1 070	1 155
TDH	Tradehold	347 330 441	310	300	360	300	300	230
TIW	Tiwheel	61 900 001	1 750	1 400	1 749	2 500	2 200	1 375
TMT	Trematon	174 872 545	58	22	64	36	115	120
TPC	Transpac	30 489 497	50	190	400	550	512	620
TRE	Trencor	158 421 842	1 020	865	1 020	1 451	2 100	3 050
TRT	Tourvest	830 350 303	88	187	150	140	156	237
TSX	Transhex	89 872 176	1 395	1 980	2 800	1 940	1 475	1 210
UCS	UCS	250 695 932	75	55	120	130	183	359
VLE	Value	207 599 040	32	52	116	191	264	300
VTL	Ventel	50 495 094	5 23	23	12	50	39	35
WBO	Wbhovco	66 000 000	660	1 020	1 620	2 650	4 400	7 300
WES	Wesco	8 441 800	9 000	7 790	13 900	19 500	33 521	38 100
WHL	Woolworths	889 239 961	385	515	725	1 139	1 420	1 800

Share Codes	Share Name	Issued Shares 2006	Market Cap 2001	Market Cap 2002	Market Cap 2003	Market Cap 2004	Market Cap 2005	Market Cap 2006
ABO	Absolute	739 708 207	110 956 231	66 573 739	14 794 164	59 176 657	29 588 328	7 397 082
ADH	Advtech	393 664 886	102 352 870	157 465 954	330 678 504	472 397 863	826 696 261	1 220 361 147
ADR	Adcorp	43 382 095	405 622 588	273 307 199	511 908 721	733 157 406	1 041 170 280	1 301 462 850
AEC	Anbeeco	14 978 039	898 682	748 902	299 561	898 682	599 122	10 185 067

AEG	Aveng	396 145 908	3 089 938 082	3 961 459 080	3 521 737 122	4 753 750 896	7 126 664 885	13 310 502 509
AFE	AECI	117 545 718	2 021 786 350	2 997 415 809	3 996 554 412	4 584 283 002	6 229 923 054	8 022 495 254
AFG	Afgem	257 622 321	363 247 473	517 820 865	386 433 482	167 454 509	105 625 152	56 676 911
AFO	Afgold	473 889 600	37 911 168	156 383 568	123 211 296	336 461 616	900 390 240	1 454 841 072
AFR	Afgri	373 794 000	1 865 232 060	2 104 460 220	2 111 936 100	2 616 558 000	2 052 129 060	2 754 861 780
AGI	AGI	203 276 047	680 974 757	559 009 129	345 569 280	565 107 411	565 107 411	965 561 223
AGL	Anglo plc	1 517 413 104	277 990 080 653	191 952 757 656	216 990 073 872	202 574 649 384	324 271 180 325	518 955 281 568
ALJ	Alljoy	41 973 333	8 394 667	8 394 667	20 566 933	29 381 333	35 677 333	16 789 333
ALT	Altech	105 854 231	2 360 549 351	2 540 501 544	3 302 652 007	4 927 514 453	5 292 711 550	6 562 962 322
AMA	Amap	212 189 689	110 338 638	222 799 173	562 302 676	1 241 309 681	1 082 167 414	1 358 014 010
ANG	Anglogol d	276 236 153	58 285 828 283	80 246 602 447	86 735 389 680	54 973 756 809	86 738 152 042	91 155 168 128
AOO	Af & Over	1 250 000	4 000 000	5 000 000	5 637 500	5 937 500	8 937 500	7 500 000
APK	Astrapak	135 131 250	405 393 750	513 498 750	986 458 125	1 574 279 063	1 824 271 875	1 836 433 688
APN	Aspen	387 476 328	2 324 857 968	2 983 567 726	4 804 706 467	7 090 816 802	12 941 709 355	12 573 606 844
ARL	Astral	43 224 669	587 855 498	674 304 836	1 229 741 833	2 636 704 809	3 328 299 513	5 035 673 939
ATN	Altron	97 174 115	783 223 367	850 273 506	1 068 915 265	1 613 090 309	2 283 591 703	3 430 246 260
BAW	Barloworld	200 739 725	11 763 347 885	12 204 975 280	14 081 891 709	21 338 632 768	22 187 761 804	32 921 314 900
BDM	Buildmax	41 805 634	11 287 521	7 106 958	6 688 901	22 993 099	57 273 719	51 420 930
BEL	Bell	94 816 900	891 278 860	905 501 395	739 571 820	587 864 780	900 760 550	2 465 239 400
BIL	Billiton	2 468 147 002	151 791 040 623	111 190 022 440	143 152 526 116	162 897 702 132	256 440 473 508	318 267 555 908
BRN	Brimstone -N-	218 181 503	69 818 081	122 181 642	261 817 804	370 908 555	822 544 266	1 494 543 296
BRT	Brimstone	41 507 955	11 622 227	24 074 614	56 865 898	64 337 330	157 730 229	300 932 674
BSB	Busby	57 946 971	43 460 228	75 331 062	104 304 548	214 403 793	347 681 826	579 469 710
BSR	Basil Read	71 081 322	67 527 256	124 392 314	103 778 730	72 502 948	241 676 495	895 624 657
CAE	Capemp	231 071 629	36 971 461	13 864 298	20 796 447	36 971 461	152 507 275	341 986 011
CAT	Cat	494 939 628	11 878 551 072	2 870 649 842	3 959 517 024	4 800 914 392	7 889 337 670	7 894 287 067
CDZ	Cadiz	239 809 524	431 657 143	371 704 762	563 552 381	812 954 286	1 009 598 096	1 175 066 668
CLH	City Lodge	42 419 153	369 046 631	712 641 770	1 158 042 877	1 495 275 143	1 845 233 156	2 823 418 824
CMG	Cenmag	9 600 000	960 000	768 000	768 000	768 000	768 000	768 000
CMH	CMH	106 052 700	288 463 344	248 163 318	362 700 234	807 061 047	1 633 211 580	1 908 948 600
CPL	Capital	401 234 900	962 963 760	782 408 055	975 000 807	1 348 149 264	1 733 334 768	1 921 915 171
CRG	Cargo	20 000 000	25 000 000	48 000 000	61 000 000	100 000 000	150 000 000	200 000 000
CRM	Ceramic	18 263 543	1 114 076 123	1 409 945 520	1 123 207 895	1 661 982 413	2 228 152 246	2 620 818 421
CSB	Cashbuild	25 805 347	99 350 586	232 248 123	536 751 218	870 930 461	1 130 016 145	1 264 462 003
DAW	Dawn	189 275 545	85 173 995	105 994 305	321 768 427	1 041 015 498	1 334 392 592	2 377 300 845
DCT	Datacentre	205 265 684	184 739 116	268 898 046	367 425 574	533 690 778	543 954 063	780 009 599
DDT	Didata	1 542 280 715	22 208 842 296	5 876 089 524	6 940 263 218	6 477 579 003	6 955 686 025	9 253 684 290
DEC	Decillion	203 698 992	315 733 438	213 883 942	183 329 093	71 294 647	28 517 859	30 554 849
DEL	Delta	49 165 553	2 709 021 970	2 409 112 097	1 887 957 235	1 686 378 468	1 597 880 473	1 081 642 166
DGC	Digicor	202 355 477	58 683 088	40 471 095	95 107 074	313 650 989	534 218 459	851 916 558
DLV	Dorbyl	34 070 056	630 296 036	947 147 557	735 913 210	817 681 344	434 393 214	483 794 795
DST	Distell	199 759 504	2 037 546 941	2 896 512 808	3 046 332 436	4 993 987 600	6 392 304 128	8 689 538 424
DTC	Datatec	155 241 192	3 151 396 198	1 047 878 046	2 134 566 390	1 567 936 039	3 104 823 840	5 146 245 515
EOH	EOH	72 093 988	80 745 267	113 908 501	141 304 216	302 794 750	346 051 142	483 029 720

FOS	Foschini	240 498 241	1 731 587 335	2 741 679 947	4 725 790 436	9 619 929 640	12 529 958 356	13 804 599 033
GDF	Goldreef	220 602 659	529 446 382	606 657 312	1 325 821 981	2 790 623 636	3 242 859 087	4 544 414 775
GFI	GFields	552 550 818	31 771 672 035	66 250 843 078	52 768 603 119	38 402 281 851	61 775 181 452	73 351 121 090
GIJ	Gijima	964 666 538	22 187 330 374	2 604 599 653	916 433 211	520 919 931	511 273 265	723 499 904
GMB	Glenmib	292 128 302	701 107 925	636 839 698	949 416 982	1 180 198 340	686 501 510	461 562 717
GND	Grindrod	468 626 210	479 873 239	656 076 694	1 115 330 380	3 702 147 059	5 389 201 415	7 310 568 876
GRF	Group 5	100 100 964	450 454 338	755 762 278	965 974 303	1 516 529 605	2 107 125 292	4 554 593 862
HAR	Harmony	398 678 495	31 296 261 858	58 605 738 765	43 256 616 708	20 412 338 944	33 847 804 226	44 333 048 644
HCI	HCI	125 723 190	339 452 613	289 163 337	440 031 165	2 765 910 180	4 714 619 625	7 417 668 210
HDC	Hudaco	32 501 083	390 012 996	559 018 628	690 648 014	1 062 785 414	1 381 296 028	1 982 566 063
HVL	Highveld	99 148 098	1 586 369 568	1 720 219 500	1 516 965 899	4 759 108 704	8 407 758 710	7 732 560 163
HWN	Howden	65 729 109	45 353 085	53 897 869	98 593 664	144 604 040	322 072 634	262 916 436
IDQ	Indeqty	12 170 000	10 953 000	12 170 000	14 604 000	14 604 000	7 910 500	4 868 000
ILV	Illovo	348 745 100	2 859 709 820	2 824 835 310	2 423 778 445	2 702 774 525	4 463 937 280	6 905 152 980
IMP	Implats	555 054 680	39 020 344 004	37 813 100 075	40 241 464 300	33 233 898 965	64 663 870 220	102 130 061 120
IPL	Imperial	209 617 979	11 822 454 016	11 528 988 845	14 044 404 593	21 800 269 816	29 472 287 847	34 375 252 376
ITE	Itlitle	821 800 452	709 736 455	1 195 345 738	1 344 764 675	2 521 433 354	3 212 492 751	3 884 875 088
ITG	Integrear	12 564 190	7 664 156	6 282 095	6 282 095	6 282 095	6 282 095	2 512 838
IVT	Invicta	75 693 792	227 838 314	408 746 477	560 134 061	1 059 713 088	1 093 775 294	2 195 119 968
JDG	JD Group	178 500 000	4 641 000 000	3 703 875 000	7 497 000 000	12 102 300 000	13 682 025 000	14 199 675 000
JNC	Johnnic	166 470 398	7 391 285 671	7 576 067 813	2 214 056 293	3 620 731 157	1 997 644 776	1 872 791 978
LAF	Lonafric	157 572 088	267 872 550	204 843 714	173 329 297	236 358 132	3 939 302 200	945 432 528
LBT	Liberty Int Plc	362 772 673	30 654 290 869	28 582 858 906	29 021 813 840	38 272 517 002	39 179 448 684	69 046 522 852
LON	Lonmin	144 007 599	25 201 329 825	17 280 911 880	18 720 987 870	14 256 752 301	25 561 348 823	59 273 527 748
MAS	Masnite	7 035 558	40 102 681	84 848 829	92 165 810	96 738 923	114 679 595	175 888 950
MCU	mCubed	750 000 000	382 500 000	172 500 000	277 500 000	367 500 000	292 500 000	180 000 000
MDC	Mediclinic	394 338 449	2 799 802 988	3 107 386 978	5 086 965 992	5 619 322 898	7 098 092 082	9 937 328 915
MMG	MicroMeg a	97 969 569	279 213 272	112 665 004	74 456 872	195 939 138	289 989 924	362 487 405
MRF	Merafe	2 341 569 564	1 522 020 217	2 224 491 086	1 756 177 173	1 779 592 869	1 428 357 434	1 756 177 173
MSM	Massmart	201 050 105	2 563 388 839	3 679 216 922	6 132 028 203	9 105 559 255	10 384 237 923	14 113 717 371
MST	Mustek	109 090 732	354 544 879	556 362 733	794 180 529	1 036 361 954	1 058 180 100	1 000 362 012
MTA	Metair	151 645 250	354 849 885	758 226 250	879 542 450	1 079 714 180	1 395 136 300	1 728 755 850
MTE	Martell	13 440 000	198 912 000	198 912 000	194 880 000	188 160 000	194 880 000	241 920 000
MTN	MTN	1 860 268 283	24 555 541 336	22 788 286 467	52 924 632 651	80 921 670 311	115 615 673 788	158 680 884 540
MTX	Metorex	297 816 239	1 101 920 084	923 230 341	699 868 162	789 213 033	2 144 276 921	4 824 623 072
MTZ	Matodzi	370 547 286	48 171 147	203 801 007	148 218 914	237 150 263	289 026 883	129 691 550
MUR	M & R	331 892 619	2 422 816 119	4 215 036 261	4 546 928 880	4 563 523 511	6 505 095 332	13 308 894 022
NCL	New Clicks	355 957 242	2 274 566 776	2 491 700 694	2 797 823 922	3 381 593 799	3 096 828 005	3 915 529 662
NPK	Nampak	654 757 561	7 726 139 220	9 264 819 488	8 511 848 293	10 246 955 830	11 026 117 327	14 234 429 376
NPN	Naspers	321 058 936	6 324 861 039	7 576 990 890	13 330 367 023	24 079 420 200	35 961 811 421	53 295 783 376
NTC	Netcare	1 829 898 055	5 306 704 360	5 690 982 951	9 259 284 158	9 240 985 178	13 760 833 374	25 270 892 140
OCE	Oceana	116 790 557	1 576 672 520	1 693 463 077	1 985 439 469	1 740 179 299	1 816 093 161	1 927 044 191

RAH	Ra-Hold	371 757 625	1 561 382 025	1 691 497 194	1 040 921 350	1 412 678 975	1 877 376 006	1 895 963 888
RBW	Rainbow	282 060 930	916 698 023	902 594 976	1 424 407 697	2 115 456 975	2 524 445 324	3 920 646 927
RCH	Richemont	5 220 000 000	113 796 000 000	82 998 000 000	80 962 200 000	98 136 000 000	143 289 000 000	213 498 000 000
RDF	Redefine	811 196 990	1 987 432 626	2 190 231 873	2 433 590 970	2 676 950 067	4 664 382 693	5 637 819 081
REM	Remgro	448 802 207	29 172 143 455	27 780 856 613	31 685 435 814	42 348 976 253	54 753 869 254	79 891 280 868
RLO	Reunert	195 621 876	3 775 502 207	3 863 532 051	4 264 556 897	7 335 820 350	10 289 710 678	15 992 088 363
RMH	RMBH	1 187 808 570	13 244 065 556	12 163 159 757	15 524 658 010	25 846 714 483	33 139 859 103	39 672 806 238
RNG	Randgold	74 813 128	800 500 470	1 814 218 354	2 824 195 582	822 944 408	665 836 839	665 836 839
RTO	Rex Trueform	2 905 805	8 717 415	11 623 220	11 332 640	13 221 413	20 921 796	20 631 216
SAB	SABMiller	1 501 217 923	118 596 215 917	91 274 049 718	102 097 830 943	143 291 250 750	176 768 410 433	240 855 403 566
SBL	Sable	8 420 000	33 680 000	54 730 000	45 889 000	101 040 000	122 090 000	252 600 000
SBV	Sabvest	17 326 549	31 187 788	34 653 098	34 653 098	38 118 408	53 712 302	103 959 294
SIM	Simm	1 004 986 635	150 747 995	261 296 525	241 196 792	211 047 193	1 055 235 967	4 964 633 977
SPG	Super Group	404 843 109	3 684 072 292	2 501 930 414	3 765 040 914	5 181 991 795	4 331 821 266	4 675 937 909
TDH	Tradehold	347 330 441	1 076 724 367	1 041 991 323	1 250 389 588	1 041 991 323	1 041 991 323	798 860 014
TIW	Tiwheel	61 900 001	1 083 250 018	866 600 014	1 082 631 017	1 547 500 025	1 361 800 022	851 125 014
TMT	Trematon	174 872 545	101 426 076	38 471 960	111 918 429	62 954 116	201 103 427	209 847 054
TPC	Transpac	30 489 497	15 244 749	57 930 044	121 957 988	167 692 234	156 106 225	189 034 881
TRE	Trencor	158 421 842	1 615 902 788	1 370 348 933	1 615 902 788	2 298 700 927	3 326 858 682	4 831 866 181
TRT	Tourvest	830 350 303	730 708 267	1 552 755 067	1 245 525 455	1 162 490 424	1 295 346 473	1 967 930 218
TSX	Transhex	89 872 176	1 253 716 855	1 779 469 085	2 516 420 928	1 743 520 214	1 325 614 596	1 087 453 330
UCS	UCS	250 695 932	188 021 949	137 882 763	300 835 118	325 904 712	458 773 556	899 998 396
VLE	Value	207 599 040	66 431 693	107 951 501	240 814 886	396 514 166	548 061 466	622 797 120
VTL	Ventel	50 495 094	2 524 755	11 613 872	6 059 411	25 247 547	19 693 087	17 673 283
WBO	Whhovco	66 000 000	435 600 000	673 200 000	1 069 200 000	1 749 000 000	2 904 000 000	4 818 000 000
WES	Wesco	8 441 800	759 762 000	657 616 220	1 173 410 200	1 646 151 000	2 829 775 778	3 216 325 800
WHL	Woolworths	889 239 961	3 423 573 850	4 579 585 799	6 446 989 717	10 128 443 156	12 627 207 446	16 006 319 298

Share Codes	Share Name	Total Assets 2001	Total Assets 2002	Total Assets 2003	Total Assets 2004	Total Assets 2005	Total Assets 2006
ABO	Absolut e	14 574 000	14 597 000	6 943 000	18 278 000	25 293 000	24 247 000
ADH	Advtech	390 165 000	366 986 000	340 713 000	377 146 000	438 500 000	493 613 000
ADR	Adcorp	263 468 000	327 236 000	322 502 000	400 381 000	490 774 000	591 678 000
AEC	Anbeeco	12 275 000	1 168 000	1 168 000	2 194 000	205 000	379 000
AEG	Aveng	5 098 500 000	7 226 600 000	7 366 700 000	6 665 700 000	8 044 600 000	8 992 400 000
AFE	AECI	5 358 000 000	5 027 000 000	4 706 000 000	4 695 000 000	5 373 000 000	6 630 000 000
AFG	Afgem	154 303 000	185 664 000	186 662 000	186 662 000	38 164 000	101 023 000
AFO	Afgold	27 980 000	27 677 000	29 737 000	32 089 000	8 860 000	239 489 000
AFR	Afgri	3 034 457 000	2 388 039 000	3 360 261 000	2 721 000 000	3 580 000 000	6 049 700 000
AGI	AGI	326 492 000	472 028 000	463 030 000	485 916 000	507 159 000	666 974 000
AGL	Anglo plc	280 259 000 000	268 305 000 000	276 537 000 000	280 527 000 000	311 397 000 000	322 777 000 000

ALJ	Alljoy	13 510 000	14 870 000	18 534 000	25 048 000	30 904 000	35 411 000
ALT	Altech	1 704 373 000	1 684 826 000	2 101 976 000	2 251 000 000	2 240 000 000	2 614 000 000
AMA	Amap	454 256 000	467 569 000	563 015 000	762 417 000	792 396 000	937 490 000
ANG	Anglogo ld	34 810 000 000	30 788 000 000	29 637 000 000	44 038 000 000	49 977 000 000	59 445 000 000
AOO	Af & Over	192 414 000	194 746 000	214 829 000	205 340 000	165 528 000	173 553 000
APK	Astrapa k	431 955 000	486 184 000	860 502 000	886 834 000	1 034 601 000	1 324 021 000
APN	Aspen	885 725 000	1 262 187 000	1 464 541 000	1 898 947 000	2 757 500 000	3 972 900 000
ARL	Astral	1 006 912 000	1 371 755 000	1 297 703 000	1 710 928 000	1 678 073 000	2 047 440 000
ATN	Altron	5 901 865 000	6 688 897 000	5 589 925 000	5 501 000 000	5 870 000 000	6 692 000 000
BAW	Barlowo rld	20 196 000 000	25 091 000 000	21 992 000 000	24 913 000 000	25 570 000 000	31 899 000 000
BDM	Buildma x	71 098 000	48 337 000	49 507 000	43 215 000	49 274 000	54 884 000
BEL	Bell	1 170 454 000	1 317 780 000	1 382 167 000	1 588 019 000	1 634 121 000	2 019 788 000
BIL	Billiton	224 616 000 000	302 816 000 000	212 684 000 000	193 442 000 000	279 679 000 000	328 339 000 000
BRN	Brimsto ne -N-	222 843 000	222 843 000	222 843 000	222 843 000	222 843 000	222 843 000
BRT	Brimsto ne	222 947 000	262 302 000	324 593 000	348 130 000	881 232 000	2 755 394 000
BSB	Busby	359 662 000	293 675 000	231 944 000	246 719 000	306 755 000	358 712 000
BSR	Basil Read	344 403 000	460 678 000	335 523 000	182 568 000	244 287 000	603 539 000
CAE	Capemp	54 911 000	42 095 000	44 269 000	47 263 000	106 354 000	283 018 000
CAT	Cat	2 391 974 000	2 608 922 000	2 879 968 000	3 118 623 000	3 412 719 000	4 347 079 000
CDZ	Cadiz	434 685 000	462 766 000	542 448 000	484 559 000	548 934 000	1 649 952 000
CLH	City Lodge	387 725 000	430 078 000	479 754 000	526 204 000	557 850 000	604 171 000
CMG	Cenmag	15 211 000	17 961 000	15 939 000	13 483 000	13 392 000	11 464 000
CMH	CMH	437 341 000	522 129 000	709 997 000	842 875 000	1 109 010 000	1 586 040 000
CPL	Capital	407 013 000	357 813 000	472 422 000	1 242 120 000	1 489 068 000	2 299 744 000
CRG	Cargo	235 608 000	233 591 000	252 378 000	278 464 000	272 706 000	351 901 000
CRM	Ceramic	439 925 000	637 044 000	742 865 000	816 966 000	996 588 000	1 151 794 000
CSB	Cashbui ld	322 029 000	415 585 000	475 417 000	577 902 000	762 256 000	888 280 000
DAW	Dawn	276 456 000	287 598 000	290 856 000	371 122 000	635 820 000	1 062 822 000
DCT	Datacen trix	158 046 000	229 283 000	279 915 000	276 841 000	325 025 000	421 145 000
DDT	Didata	17 171 922 000	12 888 600 000	8 169 200 000	7 986 300 000	9 111 500 000	12 045 000 000
DEC	Decillion	812 630 000	720 421 000	720 421 000	1 791 836 000	956 721 000	281 601 000
DEL	Delta	1 196 145 000	1 298 210 000	1 462 219 000	1 431 799 000	1 881 135 000	998 722 000
DGC	Digicor	105 996 000	113 089 000	115 571 000	127 812 000	184 364 000	223 404 000
DLV	Dorbyl	2 006 009 000	1 987 374 000	1 348 751 000	1 123 642 000	1 101 209 000	789 646 000
DST	Distell	3 970 801 000	4 340 554 000	4 626 605 000	4 789 881 000	4 934 376 000	5 399 485 000
DTC	Datatec	9 032 000 000	9 094 000 000	6 562 000 000	5 989 100 000	5 070 100 000	6 122 100 000
EOH	EOH	53 586 000	77 726 000	82 131 000	148 640 000	171 850 000	224 690 000
FOS	Foschini	2 913 000 000	3 073 700 000	3 360 700 000	3 784 900 000	4 578 100 000	5 671 400 000
GDF	Goldreef	592 733 000	1 223 686 000	1 182 449 000	1 254 042 000	1 323 149 000	2 173 968 000
GFI	GFields	12 567 500 000	20 371 300 000	19 217 800 000	23 203 100 000	23 997 400 000	30 493 500 000
GIJ	Gijima	673 085 000	754 495 000	725 560 000	513 822 000	675 299 000	795 771 000

GMB	Glenmib	1 166 779 000	1 575 606 000	1 039 082 000	803 790 000	4 016 862 000	5 836 193 000
GND	Grindrod	1 893 737 000	1 888 460 000	2 050 699 000	2 560 293 000	4 830 716 000	7 200 152 000
GRF	Group 5	1 642 984 000	2 272 956 000	2 093 153 000	2 330 237 000	2 820 156 000	4 695 932 000
HAR	Harmony	8 253 800 000	14 076 000 000	15 148 000 000	27 792 000 000	28 399 000 000	29 909 000 000
HCI	HCI	3 500 216 000	3 281 620 000	1 097 682 000	2 144 889 000	2 398 072 000	10 100 362 000
HDC	Hudaco	667 665 000	717 900 000	756 600 000	822 300 000	924 900 000	1 161 800 000
HVL	Highveld	3 981 072 000	3 221 517 000	3 158 654 000	3 729 000 000	3 899 000 000	4 569 000 000
HWN	Howden	203 995 000	243 954 000	248 399 000	252 599 000	325 790 000	311 210 000
IDQ	Indeqty	30 588 000	17 148 000	11 911 000	10 221 000	16 161 000	15 026 000
ILV	Illovo	5 178 000 000	5 954 700 000	6 018 000 000	5 232 500 000	4 376 900 000	4 624 300 000
IMP	Implats	11 710 100 000	14 772 400 000	16 269 300 000	17 028 500 000	20 816 400 000	23 304 600 000
IPL	Imperial	16 099 000 000	19 001 000 000	20 937 000 000	22 519 000 000	28 030 000 000	36 247 000 000
ITE	Ittile	386 220 000	557 812 000	630 115 000	755 099 000	960 428 000	1 113 000 000
ITG	Integreer	5 224 000	3 903 000	3 902 000	4 904 000	3 566 000	3 930 000
IVT	Invicta	665 651 000	786 860 000	947 045 000	933 737 000	925 384 000	2 287 015 000
JDG	JD Group	4 517 000 000	4 162 000 000	6 833 000 000	7 579 000 000	8 299 000 000	9 711 000 000
JNC	Johnnic	15 011 500 000	24 550 300 000	7 846 900 000	4 393 100 000	1 986 500 000	1 334 000 000
LAF	Lonafric	946 400 000	844 700 000	421 400 000	322 300 000	279 900 000	727 000 000
LBT	Liberty Int Plc	77 164 000 000	68 178 000 000	61 391 500 000	64 754 500 000	79 362 300 000	119 565 000 000
LON	Lonmin	14 435 000 000	14 366 000 000	11 173 000 000	11 229 900 000	13 654 200 000	20 340 000 000
MAS	Masnite	180 548 000	200 755 000	283 815 000	278 592 000	311 713 000	345 438 000
MCU	mCubed	16 668 739 000	28 196 347 000	23 959 596 000	21 081 716 000	22 270 672 000	10 485 104 000
MDC	Mediclinic	1 937 827 000	2 085 862 000	2 599 349 000	3 087 790 000	3 564 121 000	3 430 000 000
MMG	MicroMega	59 871 000	58 790 000	75 279 000	89 049 000	141 623 000	175 771 000
MRF	Merafe	64 734 000	741 784 000	788 781 000	1 168 446 000	2 023 340 000	2 078 625 000
MSM	Massmart	3 463 900 000	4 325 000 000	5 137 200 000	6 279 900 000	6 545 100 000	8 012 500 000
MST	Mustek	967 982 000	1 201 427 000	1 390 837 000	1 410 006 000	1 668 233 000	1 847 504 000
MTA	Metair	773 852 000	907 842 000	1 021 850 000	1 200 645 000	1 359 932 000	1 522 488 000
MTE	Martell	495 179 000	434 501 000	378 235 000	386 936 000	425 089 000	539 593 000
MTN	MTN	11 047 400 000	16 615 400 000	17 685 000 000	21 891 000 000	40 776 000 000	67 295 000 000
MTX	Metorex	697 062 000	773 505 000	956 228 000	997 415 000	1 285 669 000	1 708 661 000
MTZ	Matodzi	366 304 000	297 224 000	201 498 000	274 686 000	358 129 000	528 417 000
MUR	M & R	5 658 900 000	6 357 300 000	6 140 900 000	6 019 800 000	7 114 500 000	10 185 800 000
NCL	New Clicks	1 862 949 000	2 216 178 000	3 137 179 000	2 963 678 000	3 003 961 000	3 576 094 000
NPK	Nampak	7 747 300 000	12 327 400 000	10 100 500 000	10 238 600 000	9 713 500 000	11 607 700 000
NPN	Naspers	15 621 513 000	15 200 352 000	10 463 400 000	10 582 000 000	12 381 600 000	15 712 400 000

NTC	Netcare	3 424 400 000	4 078 000 000	5 605 900 000	5 242 200 000	5 903 100 000	50 305 000 000
OCE	Oceana	959 003 000	1 145 937 000	1 284 446 000	1 432 331 000	1 437 865 000	1 302 871 000
RAH	Ra-Hold	2 744 745 000	2 116 732 000	1 981 422 000	1 837 684 000	2 067 125 000	1 872 925 000
RBW	Rainbow	1 263 536 000	1 270 209 000	1 646 001 000	1 831 816 000	1 970 365 000	2 458 345 000
RCH	Richemont	28 303 200 000	47 483 000 000	43 691 000 000	43 777 000 000	62 307 000 000	62 045 000 000
RDF	Redefine	1 398 636 000	1 953 088 000	2 525 307 000	2 891 450 000	3 988 038 000	6 102 751 000
REM	Remgro	18 360 000 000	23 662 000 000	27 640 000 000	30 186 000 000	39 274 000 000	40 930 000 000
RLO	Reunert	2 514 600 000	2 919 500 000	3 297 800 000	2 706 500 000	3 685 900 000	5 263 500 000
RMH	RMBH	7 925 300 000	9 312 100 000	10 907 200 000	12 947 100 000	15 703 000 000	19 070 700 000
RNG	Randgold	1 547 380 000	688 920 000	1 158 220 000	1 420 877 000	1 749 327 000	1 749 327 000
RTO	Rex Trueform	190 212 000	192 536 000	215 761 000	203 602 000	165 202 000	173 545 000
SAB	SABMiller	28 269 000 000	44 252 000 000	52 823 000 000	49 100 000 000	52 103 000 000	86 546 000 000
SBL	Sable	81 605 000	153 693 000	179 220 000	189 187 000	192 938 000	313 532 000
SBV	Sabvest	168 053 000	148 570 000	134 453 000	152 301 000	180 741 000	293 182 000
SIM	Simm	113 581 000	65 749 000	68 533 000	68 769 000	49 160 000	538 612 000
SPG	Super Group	2 652 241 000	3 319 982 000	3 374 216 000	3 996 150 000	5 254 714 000	6 808 835 000
TDH	Tradehold	2 567 410 000	2 812 561 000	1 917 722 000	1 695 152 000	1 639 496 000	1 751 316 000
TIW	Tiwheel	1 397 944 000	1 888 728 000	1 781 075 000	1 943 668 000	2 088 091 000	3 026 110 000
TMT	Trematon	112 653 000	27 316 000	37 368 000	67 019 000	116 416 000	111 220 000
TPC	Transpac	146 554 000	141 822 000	153 563 000	172 249 000	245 813 000	225 520 000
TRE	Trencor	10 398 371 000	8 961 000 000	7 271 000 000	7 923 000 000	9 203 000 000	11 484 200 000
TRT	Tourvest	643 995 000	825 867 000	927 641 000	565 187 000	602 744 000	782 388 000
TSX	Transhex	831 367 000	1 165 994 000	1 412 274 000	1 451 492 000	1 549 513 000	1 311 236 000
UCS	UCS	200 240 000	190 884 000	312 381 000	230 728 000	258 767 000	451 636 000
VLE	Value	312 160 000	364 121 000	351 403 000	407 153 000	497 403 000	761 973 000
VTL	Ventel	18 958 000	24 859 000	30 967 000	38 628 000	38 107 000	38 316 000
WBO	Wbhovco	960 870 000	1 274 660 000	1 332 272 000	1 467 410 000	2 252 305 000	2 932 068 000
WES	Wesco	4 322 785 000	4 322 785 000	1 222 049 000	1 406 374 000	1 614 239 000	1 727 356 000
WHL	Woolworths	3 760 900 000	4 028 900 000	4 765 100 000	5 681 300 000	6 836 700 000	8 489 400 000

Share Codes	Share Name	Total Equity 2001	Total Equity 2002	Total Equity 2003	Total Equity 2004	Total Equity 2005	Total Equity 2006
ABO	Absolute	79 000	1 190 000	-7 429 000	-4 466 000	6 352 000	4 765 000
ADH	Advtech	160 100 000	142 314 000	173 733 000	208 064 000	245 199 000	293 218 000
ADR	Adcorp	138 691 000	114 671 000	106 227 000	138 193 000	184 829 000	252 595 000
AEC	Anbeeco	2 384 000	504 000	504 000	136 000	1 000	33 000
AEG	Aveng	1 136 100 000	1 728 000 000	2 008 100 000	1 739 900 000	2 024 100 000	2 503 800 000
AFE	AECI	1 743 000 000	1 653 000 000	1 206 000 000	1 464 000 000	1 698 000 000	2 562 000 000
AFG	Afgem	136 936 000	147 358 000	149 987 000	24 360 000	28 854 000	56 207 000
AFO	Afgold	27 899 000	27 525 000	28 192 000	31 129 000	8 233 000	177 121 000
AFR	Afgrl	1 124 771 000	1 263 743 000	1 215 236 000	1 268 000 000	1 308 000 000	1 519 600 000
AGI	AGI	142 110 000	166 593 000	172 675 000	204 631 000	204 861 000	222 387 000
AGL	Anglo plc	159 068 000 000	139 467 000 000	143 557 000 000	152 905 000 000	157 016 000 000	187 285 000 000
ALJ	Alljoy	3 365 000	4 467 000	6 237 000	8 388 000	15 255 000	15 846 000
ALT	Altech	763 890 000	898 784 000	1 405 771 000	1 583 000 000	1 068 000 000	1 408 000 000
AMA	Amap	175 170 000	201 997 000	236 596 000	311 134 000	403 200 000	509 125 000
ANG	Anglogold	9 060 000 000	9 512 000 000	8 457 000 000	21 556 000 000	20 180 000 000	24 816 000 000
AOO	Af & Over	163 542 000	166 703 000	176 406 000	163 293 000	130 064 000	139 120 000
APK	Astrapak	96 501 000	147 716 000	198 634 000	288 779 000	395 732 000	540 905 000
APN	Aspen	64 501 000	388 868 000	577 811 000	855 772 000	1 076 400 000	1 832 500 000
ARL	Astral	345 659 000	449 586 000	586 995 000	637 679 000	790 960 000	996 161 000
ATN	Altron	2 827 440 000	3 188 962 000	2 971 247 000	3 003 000 000	2 658 000 000	3 189 000 000
BAW	Barloworld	7 952 000 000	10 019 000 000	8 672 000 000	8 945 000 000	9 690 000 000	10 605 000 000
BDM	Buildmax	30 293 000	39 594 000	39 955 000	32 834 000	35 006 000	38 402 000
BEL	Bell	664 129 000	712 385 000	694 697 000	696 409 000	691 773 000	932 448 000
BIL	Billiton	92 847 000 000	129 899 000 000	92 431 000 000	90 112 000 000	116 538 000 000	157 025 000 000
BRN	Brimstone -N-	150 599 000	150 599 000	150 599 000	150 599 000	150 599 000	150 599 000
BRT	Brimstone	150 701 000	181 017 000	128 410 000	277 506 000	495 526 000	1 559 642 000
BSB	Busby	187 256 000	172 369 000	155 459 000	167 599 000	167 365 000	209 141 000
BSR	Basil Read	-9 223 000	36 531 000	75 942 000	-12 699 000	10 843 000	172 054 000
CAE	Capemp	49 302 000	41 381 000	43 406 000	44 314 000	74 291 000	207 120 000
CAT	Cat	1 901 772 000	2 033 351 000	2 201 153 000	2 339 633 000	2 624 284 000	3 296 007 000
CDZ	Cadiz	320 222 000	380 440 000	278 065 000	296 571 000	347 067 000	413 273 000
CLH	City Lodge	273 032 000	302 581 000	341 262 000	390 057 000	417 999 000	463 620 000
CMG	Cenmag	6 766 000	6 387 000	6 727 000	5 704 000	5 741 000	6 689 000
CMH	CMH	141 577 000	168 468 000	210 670 000	258 320 000	333 757 000	297 642 000
CPL	Capital	372 209 000	330 974 000	433 820 000	955 376 000	1 279 895 000	1 743 089 000
CRG	Cargo	104 002 000	110 785 000	110 025 000	124 953 000	143 121 000	198 870 000
CRM	Ceramic	310 299 000	430 348 000	513 428 000	585 320 000	717 565 000	844 468 000
CSB	Cashbuild	89 024 000	100 883 000	138 882 000	182 253 000	212 774 000	281 993 000
DAW	Dawn	112 064 000	123 105 000	96 481 000	124 790 000	193 336 000	294 763 000
DCT	Datacentri x	49 673 000	93 615 000	121 915 000	152 130 000	186 178 000	215 351 000
DDT	Didata	4 791 528 000	3 994 000 000	2 907 900 000	2 544 400 000	2 221 500 000	3 405 000 000
DEC	Decillion	286 660 000	283 661 000	283 661 000	175 366 000	41 587 000	47 961 000
DEL	Delta	709 094 000	816 532 000	906 313 000	903 138 000	1 614 755 000	828 036 000

DGC	Digicor	69 299 000	82 450 000	94 279 000	98 812 000	100 144 000	136 211 000
DLV	Dorbyl	876 969 000	862 675 000	679 856 000	699 022 000	747 031 000	511 562 000
DST	Distell	2 043 825 000	2 103 423 000	2 289 502 000	2 529 082 000	2 791 363 000	3 238 111 000
DTC	Datatec	2 735 000 000	3 304 000 000	2 206 000 000	1 899 900 000	1 922 400 000	1 925 100 000
EOH	EOH	20 795 000	22 617 000	33 900 000	47 890 000	13 177 000	65 196 000
FOS	Foschini	1 825 800 000	1 826 300 000	2 057 500 000	2 279 200 000	2 503 300 000	2 971 300 000
GDF	Goldreef	567 238 000	762 391 000	829 031 000	1 006 520 000	1 066 142 000	1 348 727 000
GFI	GFields	7 392 700 000	11 662 900 000	11 963 700 000	15 612 200 000	16 534 100 000	19 305 100 000
GIJ	Gijima	48 642 000	-1 753 000	-185 059 000	-214 318 000	53 438 000	148 139 000
GMB	Glenmib	78 682 000	155 970 000	210 625 000	167 039 000	104 196 000	51 163 000
GND	Grindrod	706 390 000	508 530 000	574 581 000	793 449 000	1 796 051 000	2 752 534 000
GRF	Group 5	376 657 000	387 762 000	464 979 000	509 561 000	602 656 000	474 549 000
HAR	Harmony	4 596 400 000	7 963 000 000	8 711 000 000	18 511 000 000	19 820 000 000	18 958 000 000
HCI	HCI	3 225 006 000	2 067 647 000	587 610 000	885 839 000	1 267 953 000	2 145 944 000
HDC	Hudaco	333 928 000	352 200 000	410 300 000	475 100 000	547 100 000	691 500 000
HVL	Highveld	1 421 993 000	1 573 052 000	1 629 864 000	2 337 000 000	1 325 000 000	1 871 000 000
HWN	Howden	98 567 000	106 415 000	120 164 000	94 080 000	150 965 000	5 382 000
IDQ	Indeqty	22 494 000	9 635 000	5 269 000	4 604 000	1 942 000	1 889 000
ILV	Illovo	1 730 900 000	2 121 200 000	1 905 600 000	1 703 900 000	1 577 900 000	1 802 500 000
IMP	Implats	6 449 200 000	7 422 600 000	10 296 300 000	10 803 500 000	14 270 100 000	14 064 900 000
IPL	Imperial	6 911 000 000	7 184 000 000	7 990 000 000	8 400 000 000	8 586 000 000	9 879 000 000
ITE	Ittite	234 767 000	334 482 000	437 705 000	514 336 000	657 053 000	790 000 000
ITG	Integrear	3 466 000	1 703 000	648 000	1 045 000	160 000	3 614 000
IVT	Invicta	329 261 000	348 564 000	454 997 000	449 148 000	458 187 000	507 867 000
JDG	JD Group	1 897 000 000	1 873 000 000	3 051 000 000	3 848 000 000	4 638 000 000	5 222 000 000
JNC	Johnnic	4 973 100 000	11 739 400 000	6 418 500 000	3 320 100 000	1 566 200 000	1 254 500 000
LAF	Lonafric	531 100 000	532 200 000	262 100 000	257 800 000	245 200 000	532 000 000
LBT	Liberty Int Plc	41 387 000 000	36 930 000 000	33 773 200 000	35 294 700 000	31 931 000 000	64 665 000 000
LON	Lonmin	10 839 000 000	9 276 000 000	6 009 000 000	5 799 700 000	5 983 800 000	9 280 000 000
MAS	Masnite	108 847 000	122 128 000	186 590 000	192 580 000	212 070 000	228 781 000
MCU	mCubed	64 468 000	196 510 000	196 821 000	196 362 000	242 221 000	286 408 000
MDC	Mediclinic	1 551 125 000	1 673 254 000	1 992 833 000	2 316 271 000	2 735 417 000	1 764 000 000
MMG	MicroMega	-14 465 000	5 951 000	51 593 000	46 591 000	69 959 000	109 945 000
MRF	Merafe	39 812 000	363 611 000	231 104 000	259 857 000	904 868 000	1 068 149 000
MSM	Massmart	536 200 000	806 800 000	1 031 700 000	1 121 400 000	108 600 000	346 500 000
MST	Mustek	337 477 000	401 199 000	512 144 000	519 811 000	553 155 000	533 352 000
MTA	Metair	518 195 000	582 367 000	680 149 000	800 726 000	977 816 000	1 066 603 000
MTE	Martell	362 410 000	332 643 000	254 453 000	239 237 000	277 408 000	356 158 000
MTN	MTN	3 675 200 000	5 925 000 000	7 474 000 000	11 157 000 000	19 060 000 000	13 107 000 000
MTX	Metorex	300 254 000	373 943 000	423 544 000	479 665 000	819 773 000	949 997 000
MTZ	Matodzi	340 647 000	277 193 000	199 905 000	189 633 000	-321 518 000	128 799 000
MUR	M & R	1 974 400 000	2 641 500 000	2 562 600 000	2 623 300 000	2 973 700 000	2 996 300 000
NCL	New Clicks	897 549 000	969 355 000	1 291 859 000	1 202 741 000	1 154 009 000	1 485 636 000
NPK	Nampak	3 036 200 000	3 732 900 000	3 831 600 000	4 485 400 000	4 542 300 000	4 776 000 000
NPN	Naspers	8 439 461 000	4 576 455 000	2 095 500 000	907 200 000	3 661 900 000	5 662 400 000

NTC	Netcare	1 853 700 000	2 066 200 000	2 930 500 000	2 650 400 000	3 049 000 000	5 396 300 000
OCE	Oceana	465 196 000	662 047 000	783 417 000	823 619 000	880 196 000	784 069 000
RAH	Ra-Hold	2 728 313 000	2 089 754 000	1 937 680 000	1 559 203 000	1 838 748 000	1 741 580 000
RBW	Rainbow	921 997 000	857 800 000	1 064 773 000	1 182 125 000	1 034 344 000	1 308 457 000
RCH	Richemont	12 027 400 000	21 847 000 000	24 559 000 000	28 093 000 000	48 477 000 000	48 639 000 000
RDF	Redefine	218 019 000	175 743 000	251 072 000	460 431 000	1 237 365 000	2 151 170 000
REM	Remgro	16 997 000 000	22 354 000 000	25 956 000 000	28 123 000 000	36 419 000 000	37 684 000 000
RLO	Reunert	829 000 000	789 400 000	937 700 000	595 200 000	1 125 300 000	1 333 200 000
RMH	RMBH	5 929 900 000	7 006 600 000	8 132 900 000	9 322 200 000	11 402 400 000	14 409 300 000
RNG	Randgold	63 350 000	547 629 000	1 053 644 000	1 282 899 000	1 519 378 000	1 519 378 000
RTO	Rex Trueform	162 153 000	163 889 000	172 670 000	161 826 000	130 606 000	140 317 000
SAB	SABMiller	12 212 000 000	14 198 000 000	6 154 000 000	5 552 000 000	8 752 000 000	4 848 000 000
SBL	Sable	75 117 000	90 934 000	93 809 000	109 316 000	141 613 000	186 621 000
SBV	Sabvest	134 084 000	135 047 000	127 107 000	142 973 000	172 745 000	279 932 000
SIM	Simm	87 208 000	35 116 000	36 400 000	5 583 000	-34 921 000	177 217 000
SPG	Super Group	1 277 844 000	1 217 975 000	1 076 793 000	887 044 000	1 054 623 000	763 562 000
TDH	Tradehold	847 820 000	1 643 148 000	883 268 000	724 300 000	956 759 000	909 812 000
TIW	Tiwheel	552 816 000	749 607 000	729 305 000	846 707 000	998 541 000	1 195 245 000
TMT	Trematon	104 149 000	23 276 000	31 854 000	46 080 000	98 166 000	104 385 000
TPC	Transpac	60 544 000	70 894 000	85 091 000	96 747 000	131 482 000	114 744 000
TRE	Trencor	3 211 463 000	2 448 000 000	2 078 800 000	2 022 200 000	2 894 800 000	3 592 600 000
TRT	Tourvest	345 974 000	413 633 000	502 184 000	182 386 000	254 222 000	252 786 000
TSX	Transhex	581 848 000	870 158 000	997 972 000	1 022 105 000	1 049 586 000	912 465 000
UCS	UCS	175 632 000	158 161 000	172 291 000	109 752 000	131 423 000	177 700 000
VLE	Value	126 406 000	133 699 000	170 799 000	200 725 000	240 645 000	366 525 000
VTL	Ventel	3 663 000	1 119 000	1 470 000	3 870 000	6 837 000	10 888 000
WBO	Wbhovco	203 502 000	303 413 000	348 701 000	395 704 000	523 900 000	686 557 000
WES	Wesco	2 275 663 000	2 275 663 000	1 191 877 000	1 402 708 000	1 609 856 000	1 715 552 000
WHL	Woolworth s	2 360 400 000	2 340 900 000	2 406 400 000	2 804 500 000	1 915 800 000	2 355 300 000

Share Codes	Share Name	Total Debt 2001	Total Debt 2002	Total Debt 2003	Total Debt 2004	Total Debt 2005	Total Debt 2006
ABO	Absolute	6 265 000	8 113 000	6 501 000	9 441 000	10 419 000	6 678 000
ADH	Advtech	129 250 000	134 163 000	78 551 000	35 181 000	20 000 000	11 000 000
ADR	Adcorp	12 655 000	105 175 000	99 841 000	87 804 000	56 713 000	95 862 000
AEC	Anbeeco	7 697 000	0	0	1 580 000	0	96 000
AEI	Aveng	1 562 600 000	1 868 200 000	1 988 300 000	2 049 100 000	2 023 400 000	1 719 100 000
AFE	AECI	1 564 000 000	1 456 000 000	1 480 000 000	995 000 000	1 207 000 000	1 315 000 000
AFG	Afgem	3 285 000	20 654 000	16 744 000	2 032 000	2 578 000	1 484 000
AFO	Afgold	0	0	1 438 000	281 000	181 000	0
AFR	Afgri	267 393 000	177 745 000	649 589 000	314 000 000	442 000 000	2 931 400 000
AGI	AGI	47 049 000	128 805 000	162 114 000	113 977 000	156 194 000	224 343 000
AGL	Anglo plc	58 126 000 000	66 563 000 000	71 763 000 000	60 918 000 000	64 980 000 000	43 736 000 000

ALJ	Aljoy	3 616 000	3 268 000	4 718 000	9 182 000	8 825 000	11 899 000
ALT	Altech	0	0	0	0	70 000 000	30 000 000
AMA	Amap	149 391 000	25 836 000	12 602 000	4 375 000	13 391 000	10 535 000
ANG	Anglogold	11 811 000 000	7 938 000 000	7 723 000 000	3 871 000 000	6 148 000 000	3 720 000 000
AOO	Af & Over	0	0	0	0	0	0
APK	Astrapak	176 483 000	147 495 000	412 722 000	310 470 000	302 766 000	326 160 000
APN	Aspen	377 896 000	214 904 000	443 528 000	541 122 000	896 300 000	1 251 300 000
ARL	Astral	111 140 000	131 302 000	9 039 000	201 562 000	3 983 000	21 612 000
ATN	Altron	639 884 000	1 063 527 000	474 888 000	524 000 000	691 000 000	535 000 000
BAW	Barloworld	6 222 000 000	7 188 000 000	6 143 000 000	7 710 000 000	8 042 000 000	9 884 000 000
BDM	Buildmax	28 247 000	2 387 000	134 000	91 000	69 000	44 000
BEL	Bell	153 763 000	115 312 000	315 159 000	431 901 000	475 822 000	192 157 000
BIL	Billiton	69 537 000 000	85 290 000 000	58 305 000 000	41 300 000 000	74 210 000 000	70 124 000 000
BRN	Brimstone -N-	38 957 000	38 957 000	38 957 000	38 957 000	38 957 000	38 957 000
BRT	Brimstone	49 091 000	57 725 000	171 003 000	50 267 000	345 513 000	876 228 000
BSB	Busby	34 000	88 873 000	24 000 000	25 073 000	55 956 000	59 713 000
BSR	Basil Read	59 394 000	129 201 000	105 710 000	88 978 000	46 347 000	87 059 000
CAE	Capemp	4 887 000	487 000	603 000	734 000	708 000	8 996 000
CAT	Cat	0	0	0	0	0	0
CDZ	Cadiz	50 000 000	0	139 839 000	0	11 140 000	66 078 000
CLH	City Lodge	68 199 000	58 500 000	66 937 000	61 116 000	59 577 000	60 513 000
CMG	Cenmag	4 548 000	5 401 000	4 878 000	4 920 000	4 312 000	1 482 000
CMH	CMH	12 002 000	9 375 000	12 532 000	3 784 000	2 434 000	44 099 000
CPL	Capital	0	0	0	193 308 000	80 719 000	229 334 000
CRG	Cargo	55 802 000	47 693 000	63 547 000	44 321 000	42 371 000	57 401 000
CRM	Ceramic	0	0	24 076 000	23 173 000	18 982 000	5 833 000
CSB	Cashbuild	279 000	178 000	63 000	492 000	22 500 000	1 454 000
DAW	Dawn	26 684 000	15 319 000	26 986 000	31 246 000	131 527 000	284 638 000
DCT	Datacentri x	249 000	0	0	0	19 260 000	15 541 000
DDT	Didata	3 203 093 000	1 273 300 000	922 900 000	863 200 000	1 811 000 000	1 235 000 000
DEC	Decillion	109 853 000	72 490 000	72 490 000	83 339 000	125 126 000	53 432 000
DEL	Delta	147 222 000	113 801 000	187 356 000	209 975 000	29 790 000	3 621 000
DGC	Digicor	2 854 000	331 000	3 253 000	1 290 000	24 812 000	18 476 000
DLV	Dorbyl	306 169 000	376 810 000	217 386 000	42 381 000	13 935 000	0
DST	Distell	1 301 785 000	1 467 031 000	1 448 854 000	1 138 979 000	1 003 602 000	763 148 000
DTC	Datatec	2 197 000 000	1 804 000 000	767 000 000	664 800 000	461 300 000	732 700 000
EOH	EOH	132 000	637 000	522 000	2 825 000	39 303 000	17 530 000
FOS	Foschini	387 400 000	489 600 000	356 800 000	321 300 000	556 100 000	1 123 100 000
GDF	Goldreef	14 582 000	365 284 000	203 482 000	56 698 000	77 867 000	514 310 000
GFI	GFields	0	1 885 600 000	323 900 000	1 635 300 000	1 463 500 000	2 343 300 000
GIJ	Gijima	62 290 000	86 656 000	431 963 000	326 980 000	111 568 000	156 774 000
GMB	Glenmib	83 769 000	45 144 000	84 537 000	5 895 000	38 367 000	37 738 000
GND	Grindrod	684 299 000	959 013 000	856 515 000	970 963 000	1 616 901 000	1 828 711 000
GRF	Group 5	131 871 000	278 362 000	316 278 000	400 365 000	376 252 000	500 392 000
HAR	Harmony	1 295 200 000	2 248 000 000	2 626 000 000	2 790 000 000	3 755 000 000	3 597 000 000
HCI	HCI	204 173 000	798 117 000	83 451 000	53 662 000	251 823 000	7 282 139 000
HDC	Hudaco	50 948 000	69 800 000	70 700 000	62 400 000	73 700 000	64 300 000
HVL	Highveld	1 221 728 000	529 793 000	610 894 000	212 000 000	700 000 000	23 000 000
HWN	Howden	0	0	0	0	0	91 275 000

IDQ	Indeqty	3 777 000	5 009 000	4 210 000	3 831 000	8 542 000	8 447 000
ILV	Illovo	1 757 500 000	1 914 300 000	2 106 300 000	1 616 500 000	1 147 200 000	1 068 300 000
IMP	Implats	137 600 000	113 100 000	267 400 000	568 600 000	3 300 000	22 600 000
IPL	Imperial	4 110 000 000	5 901 000 000	6 135 000 000	6 576 000 000	7 562 000 000	11 088 000 000
ITE	Ititile	4 143 000	10 792 000	9 469 000	8 230 000	9 677 000	10 000 000
ITG	Integrear	103 000	131 000	114 000	166 000	118 000	0
IVT	Invicta	95 856 000	92 000 000	60 216 000	56 414 000	28 923 000	1 328 686 000
JDG	JD Group	1 457 000 000	1 270 000 000	1 338 000 000	1 309 000 000	1 127 000 000	1 313 000 000
JNC	Johnnic	5 381 000 000	6 986 300 000	563 000 000	135 400 000	15 500 000	5 000 000
LAF	Lonafric	149 900 000	115 700 000	73 900 000	0	0	0
LBT	Liberty Int Plc	31 022 000 000	27 249 000 000	24 174 400 000	25 613 700 000	35 548 000 000	46 251 000 000
LON	Lonmin	44 000 000	2 024 000 000	1 471 000 000	1 885 700 000	3 784 000 000	6 075 000 000
MAS	Masnite	13 238 000	92 000	2 330 000	4 140 000	70 000	55 000
MCU	mCubed	0	0	0	0	0	0
MDC	Mediclinic	134 489 000	57 937 000	178 701 000	242 120 000	239 576 000	922 000 000
MMG	MicroMega	0	19 598 000	868 000	20 477 000	36 002 000	22 218 000
MRF	Merafe	10 547 000	314 755 000	380 882 000	470 478 000	499 049 000	674 313 000
MSM	Massmart	45 700 000	364 700 000	356 100 000	361 700 000	668 600 000	760 000 000
MST	Mustek	185 532 000	216 993 000	240 615 000	245 638 000	327 540 000	291 747 000
MTA	Metair	75 819 000	92 896 000	99 175 000	84 751 000	75 514 000	47 881 000
MTE	Martell	31 393 000	36 753 000	42 931 000	52 166 000	53 130 000	60 465 000
MTN	MTN	4 364 300 000	5 775 500 000	4 835 000 000	4 149 000 000	8 605 000 000	32 979 000 000
MTX	Metorex	104 078 000	151 994 000	250 608 000	242 673 000	111 276 000	106 747 000
MTZ	Matodzi	13 829 000	1 610 000	23 000	83 106 000	603 966 000	274 474 000
MUR	M & R	429 800 000	501 600 000	475 400 000	797 700 000	994 000 000	1 326 900 000
NCL	New Clicks	276 731 000	339 129 000	445 537 000	349 259 000	274 610 000	260 706 000
NPK	Nampak	1 971 600 000	3 776 400 000	2 057 500 000	1 844 400 000	1 210 700 000	2 000 600 000
NPN	Naspers	4 039 894 000	5 942 366 000	4 550 200 000	3 728 900 000	3 109 600 000	4 444 000 000
NTC	Netcare	494 100 000	962 700 000	1 341 400 000	1 352 100 000	1 406 300 000	33 274 600 000
OCE	Oceana	73 022 000	43 471 000	39 088 000	82 283 000	97 386 000	71 946 000
RAH	Ra-Hold	0	0	0	240 117 000	168 000 000	121 465 000
RBW	Rainbow	0	7 900 000	7 042 000	3 190 000	1 915 000	814 000
RCH	Richemont	9 243 400 000	16 597 000 000	11 426 000 000	7 576 000 000	6 654 000 000	5 551 000 000
RDF	Redefine	1 120 965 000	1 737 397 000	2 231 754 000	2 333 698 000	2 456 169 000	3 468 930 000
REM	Remgro	300 000 000	151 000 000	213 000 000	277 000 000	355 000 000	270 000 000
RLO	Reunert	340 500 000	840 800 000	904 100 000	484 500 000	998 400 000	142 000 000
RMH	RMBH	421 900 000	574 300 000	629 200 000	577 100 000	544 500 000	553 800 000
RNG	Randgold	1 098 592 000	31 304 000	0	0	0	0
RTO	Rex Trueform	0	0	0	0	0	0
SAB	SABMiller	8 429 000 000	17 497 000 000	27 867 000 000	23 688 000 000	20 902 000 000	48 112 000 000
SBL	Sable	3 477 000	54 143 000	75 697 000	70 672 000	36 941 000	113 902 000
SBV	Sabvest	29 034 000	1 862 000	5 852 000	7 906 000	5 279 000	7 615 000
SIM	Simm	22 143 000	25 220 000	26 646 000	56 334 000	71 000	129 796 000
SPG	Super Group	329 371 000	797 209 000	895 700 000	1 381 374 000	2 364 798 000	3 147 805 000

TDH	Tradehold	825 542 000	43 608 000	26 573 000	107 480 000	61 042 000	187 611 000
TIW	Tiwheel	320 225 000	424 725 000	367 657 000	438 532 000	367 575 000	737 360 000
TMT	Trematon	5 282 000	3 445 000	5 186 000	20 375 000	13 605 000	1 000
TPC	Transpac	47 430 000	27 460 000	19 489 000	23 235 000	55 082 000	49 029 000
TRE	Trencor	5 566 780 000	5 026 300 000	3 980 900 000	4 295 000 000	5 181 200 000	6 426 900 000
TRT	Tourvest	68 422 000	90 915 000	94 597 000	125 530 000	57 958 000	17 623 000
TSX	Transhex	42 754 000	13 119 000	11 169 000	62 183 000	49 487 000	59 469 000
UCS	UCS	316 000	3 730 000	58 151 000	27 785 000	29 554 000	81 221 000
VLE	Value	85 372 000	129 109 000	64 499 000	55 134 000	74 486 000	116 933 000
VTI	Ventel	5 673 000	18 083 000	24 647 000	26 750 000	22 637 000	15 470 000
WBO	Wbhovco	15 130 000	11 785 000	35 899 000	29 414 000	82 056 000	224 874 000
WES	Wesco	1 041 547 000	1 041 547 000	0	0	0	0
WHL	Woolworths	185 300 000	480 500 000	729 700 000	1 137 900 000	2 992 300 000	3 853 800 000

Share Codes	Share Name	Net Profit 2001	Net Profit 2002	Net Profit 2003	Net Profit 2004	Net Profit 2005	Net Profit 2006
ABO	Absolute	-3 226 000	-10 946 000	-2 578 000	-3 222 000	-1 918 000	-1 846 000
ADH	Advtech	23 706 000	19 793 000	32 668 000	44 222 000	58 789 000	86 472 000
ADR	Adcorp	63 028 000	42 655 000	40 190 000	64 968 000	79 138 000	103 802 000
AEC	Anbeeco	-10 623 200	-1 881 000	-1 881 000	-244 667	-135 000	32 000
AEG	Aveng	240 900 000	330 400 000	316 500 000	34 800 000	95 200 000	356 000 000
AFE	AECI	223 000 000	346 000 000	381 000 000	430 000 000	564 000 000	979 000 000
AFG	Afgem	21 083 000	10 862 769	16 250 667	16 250 667	-1 455 200	-15 575 000
AFO	Afgold	-338 000	-374 000	-536 000	-3 002 000	-27 802 000	-22 889 000
AFR	Afgri	260 432 000	253 277 000	277 945 000	306 000 000	147 000 000	166 500 000
AGI	AGI	54 459 000	62 659 000	29 618 000	44 074 000	36 377 000	79 075 000
AGL	Anglo plc	16 818 000 000	16 370 000 000	7 883 000 000	14 104 000 000	20 836 000 000	46 862 000 000
ALJ	Alljoy	440 667	1 230 000	1 902 000	2 311 000	2 389 000	-1 726 500
ALT	Altech	245 396 000	259 554 000	375 019 000	326 000 000	340 000 000	349 000 000
AMA	Amap	14 450 000	20 190 000	32 241 000	68 853 750	123 098 000	131 914 000
ANG	Anglogold	2 546 000 000	4 040 000 000	2 497 000 000	827 000 000	-852 000 000	-1 034 000 000
AOO	Af & Over	3 479 000	6 012 000	13 391 000	4 120 000	14 638 000	4 139 000
APK	Astrapak	47 403 000	58 462 000	73 994 000	98 192 000	116 475 000	155 056 000
APN	Aspen	177 508 000	232 593 000	281 967 000	369 268 000	494 400 000	638 400 000
ARL	Astral	111 856 000	136 930 000	209 965 000	264 520 000	383 787 000	516 784 000
ATN	Altron	567 180 000	574 608 000	797 213 000	459 000 000	525 000 000	754 000 000

BAW	Barlowor Id	1 046 000 000	1 302 000 000	1 260 000 000	1 861 000 000	2 111 000 000	2 812 000 000
BDM	Buildma x	2 303 000	3 441 000	549 000	-6 759 000	6 345 000	3 948 000
BEL	Bell	98 454 000	125 281 000	36 654 000	-11 907 000	-10 569 000	238 607 000
BIL	Billiton	1 925 000 000	16 458 000 000	14 296 000 000	21 924 000 000	36 608 000 000	43 844 000 000
BRN	Brimston e -N-	2 510 400	2 510 400	2 510 400	2 510 400	2 510 400	2 510 400
BRT	Brimston e	2 923 200	12 453 000	15 187 000	17 861 000	134 410 000	1 101 612 000
BSB	Busby	28 125 000	19 705 000	19 196 000	19 010 000	37 062 000	46 054 000
BSR	Basil Read	-13 860 000	5 930 000	13 004 000	-98 481 000	23 384 000	51 839 000
CAE	Capemp	915 600	114 000	725 000	5 885 000	18 534 000	90 649 000
CAT	Cat	226 250 000	225 559 000	301 713 000	338 024 000	419 604 000	492 577 000
CDZ	Cadiz	62 627 000	67 525 000	68 224 000	80 855 000	94 551 000	119 706 000
CLH	City Lodge	37 883 000	55 026 000	83 951 000	97 976 000	119 827 000	139 208 000
CMG	Cenmag	269 000	-244 000	274 000	-627 000	2 000	-1 594 000
CMH	CMH	38 189 000	44 245 000	57 662 000	69 991 000	116 035 000	164 396 000
CPL	Capital	46 612 000	41 471 000	50 653 000	83 267 000	140 075 000	147 568 000
CRG	Cargo	1 940 000	8 011 000	2 765 000	8 309 000	11 965 000	23 122 000
CRM	Ceramic	87 485 000	113 582 000	128 998 000	130 904 000	166 474 000	185 543 000
CSB	Cashbuil d	18 628 000	27 915 000	49 885 000	58 642 000	82 100 000	89 944 000
DAW	Dawn	34 304 000	19 839 000	31 354 000	34 266 000	87 917 000	130 632 000
DCT	Datacen trix	19 587 000	26 136 000	42 077 000	40 075 000	52 601 000	56 057 000
DDT	Didata	1 444 609 000	202 600 000	-343 600 000	73 200 000	107 400 000	287 000 000
DEC	Decillion	74 822 000	39 271 000	39 271 000	20 349 429	-110 317 000	16 893 000
DEL	Delta	225 729 000	246 387 000	180 677 000	109 263 000	99 413 000	-127 430 000
DGC	Digicor	25 962 000	17 324 000	17 409 000	24 610 000	42 794 000	66 709 000
DLV	Dorbyl	71 376 000	102 646 000	100 638 000	73 825 000	95 956 000	-51 145 000
DST	Distell	203 416 000	264 084 000	259 344 000	348 340 000	469 013 000	535 970 000
DTC	Datatec	544 000 000	360 000 000	-104 727 273	-69 700 000	33 260 000	254 200 000
EOH	EOH	10 277 000	13 039 000	15 730 000	20 480 000	26 855 000	37 334 000
FOS	Foschini	119 100 000	211 300 000	370 300 000	530 300 000	778 100 000	1 009 000 000
GDF	Goldreef	46 988 000	121 100 000	152 604 000	224 818 000	243 988 000	327 737 000
GFI	GFields	855 000 000	3 196 300 000	2 512 300 000	916 000 000	431 200 000	1 564 100 000
GIJ	Gijima	144 971 000	119 850 000	-79 619 000	-5 755 000	64 817 000	43 443 000

GMB	Glenmib	61 476 000	89 710 000	89 644 000	80 871 000	33 195 000	-28 951 000
GND	Grindrod	112 021 000	150 340 000	208 290 000	514 772 000	775 357 000	1 064 534 000
GRF	Group 5	52 003 000	75 902 000	76 513 000	99 997 000	105 631 000	146 549 000
HAR	Harmony	263 900 000	2 037 000 000	1 123 000 000	-842 000 000	-1 476 000 000	-956 000 000
HCI	HCI	-8 166 000	-298 035 000	-82 243 000	-25 355 000	411 367 000	113 513 000
HDC	Hudaco	67 610 000	90 800 000	110 730 000	113 700 000	127 800 000	165 000 000
HVL	Highveld	25 254 000	252 288 000	53 828 000	866 000 000	1 721 700 000	1 041 000 000
HWN	Howden	2 612 000	8 964 000	22 614 000	23 849 000	26 874 000	17 570 000
IDQ	Indeqty	2 335 000	-6 401 000	-3 069 000	-993 000	-1 590 000	1 022 000
ILV	Illovo	304 700 000	405 100 000	574 400 000	347 000 000	192 100 000	451 500 000
IMP	Implats	3 621 100 000	3 462 700 000	2 405 200 000	2 329 700 000	2 672 900 000	3 874 900 000
IPL	Imperial	1 156 000 000	1 348 000 000	1 513 000 000	1 588 000 000	2 073 000 000	2 247 000 000
ITE	Itlile	57 031 000	96 391 000	124 047 000	155 219 000	196 381 000	245 000 000
ITG	Integreer	507 000	-64 000	-882 000	242 000	-710 000	-391 000
IVT	Invicta	57 133 000	72 681 000	142 243 000	136 923 000	142 877 000	125 716 000
JDG	JD Group	392 800 000	252 000 000	452 400 000	871 400 000	1 213 000 000	1 446 000 000
JNC	Johnnic	1 038 900 000	696 300 000	726 300 000	-66 700 000	412 700 000	21 300 000
LAF	Lonafric	-67 020 000	-12 500 000	-18 600 000	-10 570 000	2 500 000	-1 400 000
LBT	Liberty Int Plc	838 400 000	1 082 000 000	937 900 000	994 700 000	1 099 600 000	1 434 000 000
LON	Lonmin	2 988 000 000	2 758 000 000	859 100 000	1 254 000 000	1 275 000 000	2 705 500 000
MAS	Masnite	8 211 000	13 183 000	12 925 000	5 830 000	12 959 000	20 460 000
MCU	mCubed	21 063 000	53 062 000	32 508 000	41 249 000	37 615 000	-74 876 000
MDC	Mediclinic	264 213 000	319 097 000	377 839 000	461 671 000	538 949 000	380 600 000
MMG	MicroMega	33 959 000	15 143 000	12 576 000	11 204 000	17 056 000	32 845 000
MRF	Merafe	1 102 000	-15 312 000	-146 845 000	7 397 333	68 351 000	190 172 000
MSM	Massmart	220 000 000	365 700 000	490 000 000	643 100 000	680 800 000	861 300 000
MST	Mustek	65 059 000	109 450 000	117 850 000	76 598 000	107 918 000	59 830 000
MTA	Metair	88 435 000	81 965 000	130 273 000	158 642 000	164 841 000	216 902 000
MTE	Martell	4 704 000	7 989 000	8 528 000	-9 487 000	17 350 000	17 050 000
MTN	MTN	1 186 400 000	1 124 900 000	2 771 000 000	4 965 000 000	9 082 666 667	12 094 000 000
MTX	Metorex	88 203 000	98 440 000	15 281 000	37 211 000	46 376 000	190 734 000
MTZ	Matodzi	-2 989 000	-3 032 000	-184 000	7 155 000	-114 551	-1 419 000

						000	
MUR	M & R	188 600 000	427 000 000	494 100 000	414 500 000	406 000 000	549 300 000
NCL	New Clicks	176 717 000	212 146 000	221 296 000	270 634 000	221 638 000	251 612 000
NPK	Nampak	489 500 000	764 900 000	950 800 000	946 900 000	764 800 000	881 500 000
NPN	Naspers	-94 956 000	-285 812 000	-363 800 000	648 000 000	2 191 000 000	2 152 000 000
NTC	Netcare	374 200 000	511 700 000	655 900 000	657 400 000	802 700 000	581 600 000
OCE	Oceana	137 093 000	180 317 000	202 683 000	160 570 000	129 910 000	134 636 000
RAH	Ra-Hold	209 098 000	-433 040 000	-164 248 000	400 386 000	289 941 000	57 922 000
RBW	Rainbow	113 249 000	154 655 000	275 215 000	227 520 000	213 100 000	400 286 000
RCH	Richemont	3 527 200 000	4 599 600 000	3 260 000 000	4 856 000 000	3 081 000 000	4 748 000 000
RDF	Redefine	82 824 000	103 456 000	116 197 000	145 684 000	111 662 000	226 085 000
REM	Remgro	398 000 000	547 000 000	981 000 000	890 000 000	896 000 000	1 128 000 000
RLO	Reunert	298 000 000	371 300 000	478 700 000	511 100 000	635 300 000	929 700 000
RMH	RMBH	420 900 000	613 000 000	115 100 000	277 400 000	329 600 000	494 100 000
RNG	Randgold	-13 644 000	138 265 000	-173 070 000	-58 907 000	7 373 000	7 373 000
RTO	Rex Trueform	2 545 000	4 663 000	11 490 000	3 339 000	12 672 000	9 398 000
SAB	SABMiller	3 058 000 000	3 587 000 000	5 509 000 000	6 304 000 000	7 079 000 000	9 877 000 000
SBL	Sable	8 289 000	10 502 000	-14 054 000	-1 684 000	1 187 000	7 258 000
SBV	Sabvest	-4 423 000	-3 701 000	1 557 000	156 000	14 050 000	84 550 000
SIM	Simm	-3 521 000	-301 000	1 322 000	-29 618 000	-26 007 000	-75 376 000
SPG	Super Group	270 301 000	314 377 000	328 158 000	403 704 000	472 031 000	402 750 400
TDH	Tradehold	91 010 000	-50 552 000	-377 194 500	-106 723 000	93 990 000	14 619 000
TIW	Tiwheel	74 311 000	119 083 000	164 809 000	178 340 000	217 723 000	85 607 000
TMT	Trematon	-3 166 000	-1 205 000	9 729 000	14 226 000	16 303 000	8 011 000
TPC	Transpac	-720 000	11 282 000	18 003 000	19 569 000	21 986 000	15 330 000
TRE	Trencor	542 593 333	-276 800 000	-58 900 000	204 200 000	609 300 000	565 600 000
TRT	Tourvest	108 391 000	130 575 000	165 111 000	53 271 000	94 630 000	116 765 000

TSX	Transhex	122 154 000	175 389 000	229 582 000	192 551 000	85 411 000	29 754 000
UCS	UCS	30 469 000	27 279 000	19 626 000	28 816 000	35 550 000	63 251 000
VLE	Value	22 122 000	8 040 000	29 549 000	37 316 000	45 679 000	67 945 000
VTL	Ventel	-11 225 000	-1 703 000	262 000	581 000	1 247 000	4 051 000
WBO	Wbhovco	56 403 000	66 520 000	82 166 000	95 503 000	158 505 000	219 574 000
WES	Wesco	-24 274 000	-24 274 000	-164 824 000	-32 405 000	78 124 000	2 049 000
WHL	Woolworths	287 135 000	382 200 000	564 400 000	678 000 000	784 100 000	836 800 000

Share Codes	Share Name	Earnings Yield 2001	Earnings Yield 2002	Earnings Yield 2003	Earnings Yield 2004	Earnings Yield 2005	Earnings Yield 2006
ABO	Absolute	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ADH	Advtech	13.5%	15.1%	10.6%	8.9%	6.2%	5.6%
ADR	Adcorp	17.7%	15.4%	8.0%	8.8%	8.1%	7.6%
AEC	Anbeeco	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%
AEG	Aveng	11.7%	13.2%	12.8%	7.3%	6.5%	6.0%
AFE	AECI	14.0%	13.3%	10.7%	9.5%	9.0%	11.7%
AFG	Afgem	11.4%	6.9%	0.0%	0.0%	0.0%	0.0%
AFO	Afgold	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AFR	Afgri	21.2%	13.0%	20.3%	15.1%	8.9%	5.9%
AGI	AGI	8.6%	10.8%	9.7%	9.0%	6.6%	10.3%
AGL	Anglo plc	5.3%	11.2%	5.6%	8.4%	6.7%	7.9%
ALJ	Alljoy	4.9%	18.5%	11.6%	0.0%	10.8%	0.0%
ALT	Altech	9.7%	12.2%	15.2%	9.1%	8.9%	6.5%
AMA	Amap	11.4%	13.3%	14.2%	11.3%	10.3%	12.8%
ANG	Anglogold	4.9%	5.9%	3.7%	1.5%	0.0%	0.0%
AOO	Af & Over	5.7%	8.7%	16.4%	4.6%	8.7%	5.8%
APK	Astrapak	23.0%	19.7%	18.9%	11.6%	10.0%	9.4%
APN	Aspen	7.2%	9.1%	8.8%	7.6%	5.0%	5.2%
ARL	Astral	20.0%	23.3%	18.3%	12.1%	12.7%	12.9%
ATN	Altron	13.3%	14.6%	18.4%	11.6%	10.4%	5.8%
BAW	Barloworld	8.7%	10.3%	9.6%	8.8%	8.3%	8.0%
BDM	Buildmax	42.3%	63.1%	13.0%	0.0%	17.2%	7.2%
BEL	Bell	11.1%	16.6%	4.5%	0.0%	0.0%	7.4%
BIL	Billiton	6.7%	7.0%	5.8%	6.3%	7.0%	8.1%
BRN	Brimstone -N-	11.2%	11.2%	11.2%	11.2%	11.2%	11.2%

BRT	Brimstone	11.2%	24.7%	11.0%	10.4%	15.0%	55.1%
BSB	Busby	25.2%	20.3%	18.6%	12.7%	11.1%	12.2%
BSR	Basil Read	0.0%	4.7%	8.2%	0.0%	8.6%	5.5%
CAE	Capemp	51.6%	7.5%	10.0%	15.8%	15.8%	26.7%
CAT	Cat	8.3%	10.4%	9.4%	9.1%	7.8%	6.5%
CDZ	Cadiz	21.4%	20.6%	14.5%	12.1%	9.3%	10.6%
CLH	City Lodge	15.4%	11.5%	10.7%	8.5%	7.6%	6.4%
CMG	Cenmag	17.3%	0.0%	35.0%	0.0%	0.0%	0.0%
CMH	CMH	19.3%	19.6%	26.2%	17.1%	14.0%	7.1%
CPL	Capital	13.2%	14.9%	11.6%	9.4%	7.9%	6.9%
CRG	Cargo	12.0%	36.2%	5.4%	10.4%	11.7%	11.9%
CRM	Ceramic	9.2%	8.2%	10.9%	11.6%	7.7%	7.8%
CSB	Cashbuild	27.3%	17.0%	10.6%	9.8%	7.9%	9.0%
DAW	Dawn	22.2%	16.3%	15.6%	9.1%	7.6%	8.2%
DCT	Datacentrix	14.7%	19.0%	15.0%	10.6%	8.7%	8.2%
DDT	Didata	8.3%	6.1%	0.0%	1.6%	1.2%	2.5%
DEC	Decillion	33.0%	24.3%	24.3%	17.6%	0.0%	92.7%
DEL	Delta	8.3%	10.8%	8.7%	6.3%	5.5%	0.0%
DGC	Digicor	27.1%	36.0%	21.3%	12.8%	9.4%	9.0%
DLV	Dorbyl	12.9%	15.5%	19.0%	11.1%	6.9%	0.0%
DST	Distell	13.2%	11.8%	9.9%	10.3%	8.5%	7.0%
DTC	Datatec	21.3%	13.1%	0.0%	0.0%	2.5%	5.7%
EOH	EOH	25.7%	24.3%	14.0%	14.8%	10.9%	9.2%
FOS	Foschini	8.6%	10.0%	11.8%	11.9%	9.4%	8.9%
GDF	Goldreef	18.7%	15.7%	9.3%	6.9%	6.6%	5.4%
GFI	GFields	5.1%	6.5%	5.8%	2.6%	0.8%	1.8%
GIJ	Gijima	10.3%	41.0%	0.0%	0.0%	25.7%	4.9%
GMB	Glenmib	12.5%	12.5%	12.8%	9.0%	5.2%	0.0%
GND	Grindrod	19.9%	25.0%	14.1%	13.8%	13.2%	12.5%
GRF	Group 5	20.2%	23.5%	17.2%	13.0%	8.7%	6.3%
HAR	Harmony	6.3%	10.0%	6.8%	0.0%	0.0%	0.0%
HCI	HCI	0.0%	0.0%	0.0%	0.9%	12.2%	4.5%
HDC	Hudaco	19.1%	16.6%	14.9%	11.3%	9.7%	7.7%
HVL	Highveld	1.4%	15.8%	3.3%	15.7%	18.7%	13.7%
HWN	Howden	0.0%	7.5%	15.5%	12.0%	6.9%	5.5%
IDQ	Indeqty	19.6%	0.0%	0.0%	0.0%	0.0%	14.2%
ILV	Illovo	10.9%	13.1%	19.8%	10.0%	5.7%	0.0%
IMP	Implats	18.9%	12.3%	9.2%	7.1%	6.9%	4.5%
IPL	Imperial	7.8%	12.6%	11.8%	11.6%	8.9%	8.5%
ITE	Ititile	8.6%	11.3%	11.8%	9.7%	6.7%	6.6%
ITG	Integrear	4.8%	0.0%	0.0%	3.8%	0.0%	0.0%
IVT	Invicta	16.6%	15.1%	21.2%	16.7%	10.3%	9.7%
JDG	JD Group	9.6%	10.6%	8.8%	8.9%	9.4%	10.7%
JNC	Johnnic	7.0%	7.4%	62.5%	15.6%	24.5%	5.6%

LAF	Lonafric	0.0%	0.0%	0.0%	0.0%	2.1%	0.0%
LBT	Liberty Int Plc	3.4%	5.3%	3.9%	3.0%	3.0%	2.3%
LON	Lonmin	7.8%	9.7%	3.5%	5.9%	4.4%	3.5%
MAS	Masnite	18.5%	17.5%	13.5%	4.7%	7.2%	8.9%
MCU	mCubed	10.7%	19.6%	23.7%	16.0%	17.5%	0.0%
MDC	Mediclinic	10.7%	11.7%	14.3%	10.9%	9.2%	4.2%
MMG	MicroMega	13.0%	41.0%	17.2%	4.3%	4.7%	11.3%
MRF	Merafe	1.1%	0.0%	0.0%	0.8%	6.0%	7.2%
MSM	Massmart	11.4%	12.7%	10.2%	9.0%	7.0%	8.0%
MST	Mustek	22.4%	21.8%	16.5%	8.9%	8.6%	5.0%
MTA	Metair	22.7%	14.7%	14.4%	13.4%	9.3%	11.5%
MTE	Martell	12.0%	3.6%	2.8%	6.1%	10.3%	4.2%
MTN	MTN	3.9%	5.5%	9.6%	8.7%	7.6%	6.6%
MTX	Metorex	22.4%	25.5%	4.0%	1.3%	3.2%	4.5%
MTZ	Matodzi	0.0%	0.0%	0.0%	4.0%	0.0%	0.0%
MUR	M & R	11.2%	15.0%	13.7%	12.4%	8.7%	5.7%
NCL	New Clicks	7.9%	11.3%	9.4%	9.9%	7.8%	6.5%
NPK	Nampak	8.0%	9.1%	11.3%	9.5%	7.4%	7.3%
NPN	Naspers	0.0%	0.0%	0.0%	6.7%	9.5%	6.6%
NTC	Netcare	12.0%	12.0%	9.7%	9.3%	8.8%	4.4%
OCE	Oceana	11.5%	10.5%	11.2%	8.7%	7.4%	6.6%
RAH	Ra-Hold	0.0%	4.8%	7.9%	27.9%	16.7%	5.8%
RBW	Rainbow	21.0%	19.8%	29.8%	16.7%	11.7%	13.9%
RCH	Richemont	5.6%	5.3%	8.6%	5.8%	5.7%	5.4%
RDF	Redefine	12.7%	15.4%	12.1%	10.7%	4.7%	8.0%
REM	Remgro	10.9%	11.8%	15.0%	12.2%	9.4%	7.5%
RLO	Reunert	9.6%	10.6%	9.7%	8.4%	8.3%	6.6%
RMH	RMBH	9.3%	14.9%	13.6%	10.4%	9.0%	9.0%
RNG	Randgold	0.0%	26.3%	0.0%	0.0%	1.1%	1.1%
RTO	Rex Trueform	4.1%	7.0%	15.4%	4.8%	10.4%	6.7%
SAB	SABMiller	6.7%	5.9%	9.6%	6.9%	6.3%	5.4%
SBL	Sable	20.2%	15.1%	0.0%	3.2%	11.3%	13.4%
SBV	Sabvest	14.3%	21.2%	30.9%	22.7%	17.6%	0.0%
SIM	Simm	0.0%	0.0%	4.3%	0.0%	0.0%	0.0%
SPG	Super Group	12.4%	9.4%	16.1%	11.5%	11.6%	9.1%
TDH	Tradehold	24.3%	0.0%	0.0%	0.0%	5.4%	3.3%
TIW	Tiwheel	7.7%	11.3%	14.8%	12.1%	7.6%	6.0%
TMT	Trematon	0.0%	0.0%	9.1%	30.0%	12.9%	3.7%
TPC	Transpac	0.0%	25.0%	20.2%	17.5%	13.8%	12.0%
TRE	Trencor	33.1%	0.0%	0.0%	3.6%	11.2%	6.8%
TRT	Tourvest	15.1%	9.9%	9.7%	4.3%	7.3%	7.2%
TSX	Transhex	10.3%	11.0%	13.9%	10.7%	5.7%	3.1%
UCS	UCS	16.9%	18.2%	8.1%	7.7%	10.1%	8.5%
VLE	Value	33.4%	14.4%	47.3%	11.6%	12.6%	10.2%

VTL	Ventel	0.0%	0.0%	2.9%	2.7%	7.1%	14.6%
WBO	Wbhovco	17.8%	17.2%	15.3%	10.6%	7.1%	6.1%
WES	Wesco	1.7%	1.7%	0.0%	17.9%	11.9%	7.6%
WHL	Woolworths	8.3%	10.4%	9.5%	10.2%	8.0%	8.0%

Share Codes	Share Name	Dividend Yield 2001	Dividend Yield 2002	Dividend Yield 2003	Dividend Yield 2004	Dividend Yield 2005	Dividend Yield 2006
ABO	Absolute	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ADH	Advtech	0.0%	0.0%	1.2%	3.3%	2.7%	2.7%
ADR	Adcorp	3.2%	0.0%	0.0%	4.3%	5.8%	5.4%
AEC	Anbeeco	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AEG	Aveng	2.6%	3.2%	3.2%	1.8%	1.6%	1.5%
AFE	AECI	5.0%	4.4%	3.6%	3.4%	3.3%	2.8%
AFG	Afgem	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AFO	Afgold	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AFR	Afgri	2.8%	4.0%	9.0%	6.7%	5.6%	1.4%
AGI	AGI	1.9%	2.4%	0.0%	0.0%	0.0%	0.0%
AGL	Anglo plc	2.8%	3.9%	2.3%	2.9%	2.4%	2.1%
ALJ	Alljoy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ALT	Altech	3.5%	4.5%	5.6%	4.3%	4.6%	3.6%
AMA	Amap	2.9%	3.3%	3.4%	3.8%	2.9%	4.0%
ANG	Anglogold	3.8%	4.5%	2.5%	1.9%	0.6%	1.3%
AOO	Af & Over	5.9%	5.1%	7.1%	7.1%	4.9%	2.3%
APK	Astrapak	5.7%	3.9%	3.0%	1.7%	1.9%	2.2%
APN	Aspen	1.2%	1.5%	2.2%	2.2%	0.0%	0.0%
ARL	Astral	6.6%	7.7%	6.3%	4.4%	5.3%	5.8%
ATN	Altron	4.1%	4.2%	5.3%	4.3%	4.1%	2.4%
BAW	Barloworld	3.8%	4.5%	4.7%	3.9%	4.2%	4.1%
BDM	Buildmax	0.0%	0.0%	0.0%	0.0%	1.1%	1.1%
BEL	Bell	1.1%	1.9%	0.0%	0.0%	0.0%	0.7%
BIL	Billiton	2.4%	2.8%	2.6%	2.8%	1.9%	1.7%
BRN	Brimstone -N-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BRT	Brimstone	0.0%	6.7%	5.9%	5.0%	2.0%	1.9%
BSB	Busby	3.3%	3.1%	2.5%	2.0%	1.5%	1.9%
BSR	Basil Read	0.0%	0.0%	36.4%	0.0%	0.0%	1.8%
CAE	Capemp	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CAT	Cat	3.5%	4.3%	0.0%	4.3%	3.3%	2.7%
CDZ	Cadiz	7.3%	6.9%	4.8%	5.1%	1.6%	0.6%
CLH	City Lodge	7.1%	6.5%	6.3%	5.9%	5.3%	4.4%
CMG	Cenmag	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%
CMH	CMH	5.8%	5.5%	7.2%	4.9%	4.2%	2.3%

CPL	Capital	13.2%	15.0%	12.4%	9.2%	7.5%	6.8%
CRG	Cargo	1.9%	8.5%	2.0%	3.4%	2.7%	3.0%
CRM	Ceramic	1.5%	1.4%	1.8%	2.1%	1.8%	2.0%
CSB	Cashbuild	9.2%	5.5%	3.5%	3.0%	2.4%	2.8%
DAW	Dawn	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
DCT	Datacentrix	0.0%	0.0%	0.0%	0.0%	2.9%	8.6%
DDT	Didata	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%
DEC	Decillion	5.0%	3.4%	3.4%	0.0%	0.0%	0.0%
DEL	Delta	3.1%	4.3%	4.6%	2.5%	1.1%	0.0%
DGC	Digicor	0.0%	0.0%	5.7%	3.2%	2.7%	2.8%
DLV	Dorbyl	8.9%	7.0%	6.6%	4.4%	2.5%	1.5%
DST	Distell	6.5%	5.8%	5.4%	5.4%	4.2%	3.9%
DTC	Datatec	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EOH	EOH	0.0%	5.6%	3.1%	3.4%	2.3%	2.0%
FOS	Foschini	3.1%	3.5%	4.1%	4.7%	4.3%	4.2%
GDF	Goldreef	0.0%	4.7%	3.9%	3.5%	3.3%	0.0%
GFI	GFields	4.2%	3.0%	2.8%	1.3%	1.0%	1.0%
GIJ	Gijima	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
GMB	Glenmib	8.4%	7.5%	8.8%	7.0%	6.7%	2.5%
GND	Grindrod	4.6%	5.7%	3.4%	3.9%	3.7%	1.6%
GRF	Group 5	7.0%	7.1%	5.7%	4.2%	2.8%	1.8%
HAR	Harmony	3.0%	3.8%	2.8%	1.0%	0.0%	0.0%
HCI	HCI	0.0%	0.0%	0.0%	0.0%	3.3%	0.0%
HDC	Hudaco	0.3%	5.5%	5.0%	3.9%	3.4%	2.8%
HVL	Highveld	0.8%	8.2%	1.2%	7.9%	20.2%	7.8%
HWN	Howden	0.0%	0.0%	4.2%	3.1%	1.7%	0.0%
IDQ	Indeqty	7.9%	0.0%	0.0%	0.0%	0.0%	0.0%
ILV	Illovo	5.5%	6.5%	9.9%	6.1%	3.4%	0.0%
IMP	Implats	10.2%	6.6%	4.7%	3.8%	3.7%	2.4%
IPL	Imperial	1.5%	0.0%	2.4%	0.0%	0.0%	0.0%
ITE	Itlile	1.6%	2.2%	2.3%	1.8%	1.7%	2.1%
ITG	Integrear	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
IVT	Invicta	7.6%	5.9%	7.0%	6.8%	4.4%	3.9%
JDG	JD Group	2.6%	2.6%	2.9%	4.1%	4.7%	5.4%
JNC	Johnnic	1.6%	0.0%	0.0%	0.0%	0.0%	30.9%
LAF	Lonafric	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
LBT	Liberty Int Plc	3.6%	4.4%	3.3%	2.6%	2.7%	2.3%
LON	Lonmin	4.6%	5.0%	4.3%	4.2%	2.8%	1.8%
MAS	Masnite	4.8%	0.0%	0.0%	0.0%	2.4%	3.0%
MCU	mCubed	4.3%	4.1%	5.3%	4.3%	4.7%	0.0%
MDC	Mediclinic	0.0%	0.0%	0.0%	0.0%	1.2%	2.6%
MMG	MicroMega	5.7%	0.0%	0.0%	0.0%	0.0%	0.0%
MRF	Merafe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSM	Massmart	3.8%	4.2%	4.1%	0.0%	3.8%	4.0%

MST	Mustek	0.0%	0.0%	6.9%	6.1%	5.7%	6.3%
MTA	Metair	6.5%	4.8%	4.4%	4.2%	3.0%	3.5%
MTE	Martell	6.1%	3.6%	2.9%	3.0%	3.5%	1.7%
MTN	MTN	0.5%	0.0%	0.0%	1.4%	1.4%	1.0%
MTX	Metorex	7.0%	3.5%	3.0%	0.0%	0.0%	0.0%
MTZ	Matodzi	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MUR	M & R	0.0%	3.4%	4.1%	3.5%	2.8%	2.1%
NCL	New Clicks	2.6%	3.9%	3.7%	4.5%	3.5%	0.6%
NPK	Nampak	4.8%	4.0%	5.4%	5.4%	5.2%	0.0%
NPN	Naspers	0.8%	1.4%	1.1%	0.8%	0.8%	1.0%
NTC	Netcare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
OCE	Oceana	4.8%	4.4%	4.7%	4.6%	5.0%	4.3%
RAH	Ra-Hold	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%
RBW	Rainbow	0.0%	4.6%	6.7%	5.7%	4.6%	5.5%
RCH	Richemont	1.2%	1.4%	2.1%	1.8%	0.0%	1.9%
RDF	Redefine	12.7%	15.4%	12.2%	10.7%	7.6%	7.8%
REM	Remgro	2.9%	3.0%	3.9%	3.7%	2.9%	2.6%
RLO	Reunert	5.0%	5.4%	6.3%	4.8%	4.6%	3.5%
RMH	RMBH	3.0%	4.7%	5.1%	4.5%	3.6%	4.1%
RNG	Randgold	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RTO	Rex Trueform	4.2%	3.7%	5.3%	5.0%	4.2%	3.6%
SAB	SABMiller	3.3%	3.1%	3.9%	2.6%	2.5%	2.5%
SBL	Sable	0.0%	2.9%	1.9%	4.4%	3.2%	2.4%
SBV	Sabvest	0.0%	0.0%	1.9%	1.4%	1.4%	0.0%
SIM	Simm	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SPG	Super Group	2.9%	3.4%	4.4%	3.0%	3.3%	2.7%
TDH	Tradehold	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TIW	Tiwheel	2.9%	2.4%	3.4%	3.6%	0.0%	0.0%
TMT	Trematon	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TPC	Transpac	0.0%	0.0%	5.0%	4.4%	3.4%	4.1%
TRE	Trencor	0.0%	0.0%	0.0%	0.7%	1.7%	1.7%
TRT	Tourvest	0.0%	5.0%	4.9%	2.2%	3.7%	3.6%
TSX	Transhex	2.8%	2.7%	3.4%	3.5%	2.4%	2.8%
UCS	UCS	0.0%	6.0%	3.5%	2.8%	3.5%	2.5%
VLE	Value	0.0%	0.0%	10.0%	2.4%	2.7%	0.0%
VTL	Ventel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
WBO	Wbhovco	0.0%	0.0%	2.4%	2.6%	1.8%	0.0%
WES	Wesco	2.2%	2.2%	2.3%	3.0%	2.5%	3.1%
WHL	Woolworths	3.8%	4.7%	1.5%	0.0%	1.3%	4.8%

NCSS - T-Test Summary Outputs

Two-Sample Test Report

Page/Date/Time 1 2008/07/25 11:46:08 AM

Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Descriptive Statistics Section

Standard Variable of Mean	Standard Count Mean of Mean	95% LCL Deviation	95% UCL Error
CAAR_1	113 0.281469	0.2893249	0.0272174
0.2275412	0.3353968		
CAAR_0	90 0.2516444	0.2760789	2.910127E-02
0.1938208	0.309468		

Note: T-alpha (CAAR_1) = 1.9814, T-alpha (CAAR_0) = 1.9870

Confidence-Limits of Difference Section

Variance Assumption	Mean DF	Standard Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	201	2.982458E-02	0.2835361	4.005861E-02	-	
4.868885E-02	0.108338					
Unequal	194.52	2.982458E-02	0.3999105	3.984558E-02	-	
4.876024E-02	0.1084094					

Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9722

Equal-Variance T-Test Section

Alternative Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power	Power
Difference <> 0	0.7445	0.457429	Accept Ho	0.114881	0.0335
Difference < 0	0.7445	0.771285	Accept Ho	0.008671	0.0011
Difference > 0	0.7445	0.228715	Accept Ho	0.185319	0.0583

Difference: (CAAR_1)-(CAAR_0)

Aspin-Welch Unequal-Variance Test Section

Alternative	Prob	Decision	Power	Power
-------------	------	----------	-------	-------

Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Level (5%)			
Difference <> 0	0.7485	0.455060	Accept Ho		
0.115572	0.033804				
Difference < 0	0.7485	0.772470	Accept Ho	0.008407	0.0010
Difference > 0	0.7485	0.227530	Accept Ho	0.184339	0.0567
Difference: (CAAR_1)-(CAAR_0)					

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (CAAR_1) normality	0.9449	0.344713	Cannot reject
Kurtosis Normality (CAAR_1) normality	0.9819	0.326173	Cannot reject
Omnibus Normality (CAAR_1) normality	1.8569	0.395174	Cannot reject
Skewness Normality (CAAR_0) normality	-0.0128	0.989792	Cannot reject
Kurtosis Normality (CAAR_0) normality	0.4874	0.625969	Cannot reject
Omnibus Normality (CAAR_0) normality	0.2377	0.887928	Cannot reject
Variance-Ratio Equal-Variance Test equal variances	1.0983	0.647692	Cannot reject
Modified-Levene Equal-Variance Test equal variances	0.2456	0.620715	Cannot reject

Two-Sample Test Report

Page/Date/Time 2 2008/07/25 11:46:08 AM

Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Median Statistics

95% LCL	95% UCL			
Variable	Count	Median	of Median	of Median
CAAR_1	113	0.245	0.219	0.337
CAAR_0	90	0.2475	0.187	0.289

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians

Mann	W	Mean	Std Dev	
Variable	Whitney U	Sum Ranks	of W	of W
CAAR_1	5328.5	11769.5	11526	415.7945
CAAR_0	4841.5	8936.5	9180	415.7945

Number Sets of Ties = 28, Multiplicity Factor = 240

Exact Probability Approximation Without Correction

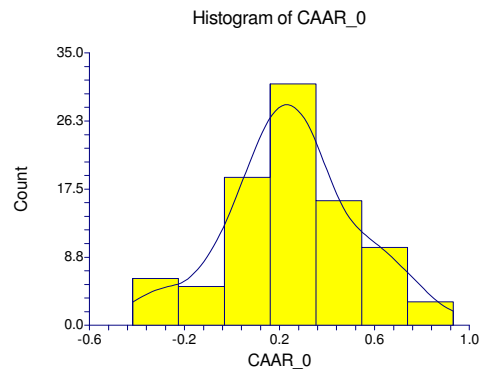
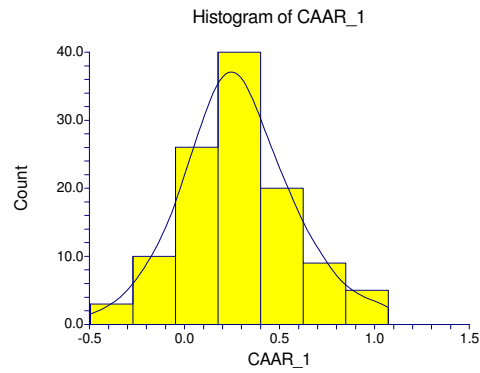
Approximation With Correction

Alternative	Prob	Decision	Prob	Decision	Prob	
Decision						
Hypothesis	Level	(5%)	Z-Value	Level	(5%)	Z-Value
Level	(5%)					
Diff<>0			-0.5856	0.558127	Accept Ho	-0.5844
0.558936	Accept Ho					
Diff<0			-0.5856	0.720937	Accept Ho	-0.5868
0.721341	Accept Ho					
Diff>0			-0.5856	0.279063	Accept Ho	-0.5844
0.279468	Accept Ho					

Kolmogorov-Smirnov Test For Different Distributions

Alternative	Dmn	Reject Ho if	Test Alpha	Decision
Prob				
Hypothesis	Criterion Value	Greater Than	Level	(Test Alpha)
Level				
D(1)<>D(2)	0.109145	0.1921	.050	Accept Ho
0.5431				
D(1)<D(2)	0.028220	0.1921	.025	Accept Ho
D(1)>D(2)	0.109145	0.1921	.025	Accept Ho

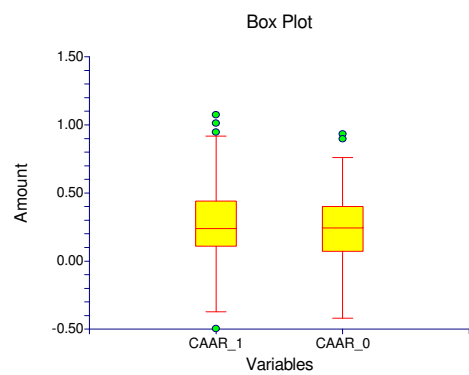
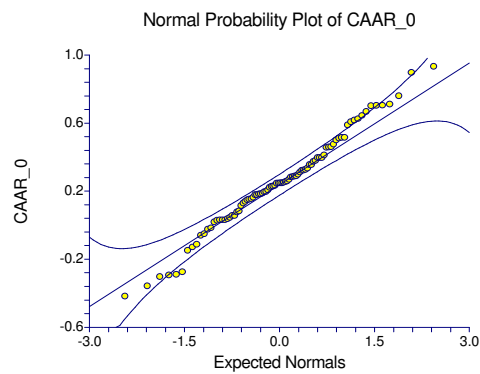
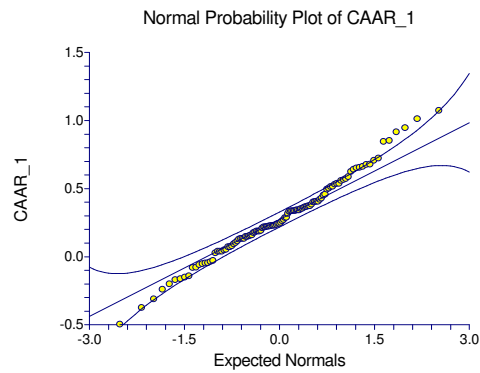
Plots Section



Two-Sample Test Report

Page/Date/Time 3 2008/07/25 11:46:08 AM

Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0



Two-Sample Test Report

Page/Date/Time 1 2008/07/25 11:56:24 AM

Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Descriptive Statistics Section

Standard Variable	Standard Count	Mean	95% LCL Deviation	95% UCL Error	of Mean	of Mean
Tobin_s_Q_1	113	1.555124	2.228777	0.2096657	1.139698	1.9705
Tobin_s_Q_0x	90	1.460211	2.925745	0.3084006		
		0.8474258	2.072996			

Note: T-alpha (Tobin_s_Q_1) = 1.9814, T-alpha (Tobin_s_Q_0x) = 1.9870

Confidence-Limits of Difference Section

Variance Assumption	Mean DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	201	9.491278E-02	2.560893	0.3618086	-	
		0.6142191	0.8040446			
Unequal	162.67	9.491278E-02	3.677965	0.3729217	-	
		0.6414788	0.8313044			

Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9747

Equal-Variance T-Test Section

Alternative Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power	Power
Difference <> 0	0.2623	0.793337	Accept Ho	0.057844	0.0125
Difference < 0	0.2623	0.603332	Accept Ho	0.028797	0.0051
Difference > 0	0.2623	0.396668	Accept Ho	0.084431	0.0203
Difference: (Tobin_s_Q_1)-(Tobin_s_Q_0x)					

Aspin-Welch Unequal-Variance Test Section

Alternative Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power	Power
Difference <> 0	0.2545	0.799422	Accept Ho	0.057365	0.0124
Difference < 0	0.2545	0.600289	Accept Ho	0.028828	0.0049
Difference > 0	0.2545	0.399711	Accept Ho	0.082052	0.0190
Difference: (Tobin_s_Q_1)-(Tobin_s_Q_0x)					

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (Tobin_s_Q_1)	11.1990	0.000000	Reject normality

Kurtosis Normality (Tobin_s_Q_1)	8.0521	0.000000	Reject normality
Omnibus Normality (Tobin_s_Q_1)	190.2550	0.000000	Reject normality
Skewness Normality (Tobin_s_Q_0x)	10.8599	0.000000	Reject normality
Kurtosis Normality (Tobin_s_Q_0x)	7.7477	0.000000	Reject normality
Omnibus Normality (Tobin_s_Q_0x)	177.9648	0.000000	Reject normality
Variance-Ratio Equal-Variance Test	1.7232	0.006484	Reject equal
variances			
Modified-Levene Equal-Variance Test	0.0167	0.897432	Cannot reject
equal variances			

Two-Sample Test Report

Page/Date/Time 2 2008/07/25 11:56:24 AM

Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Median Statistics

95% LCL	95% UCL			
Variable	Count	Median	of Median	of Median
Tobin_s_Q_1	113	1.088	0.861	1.3
Tobin_s_Q_0x	90	0.9115	0.689	1.061

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians

Mann	W	Mean	Std Dev	
Variable	Whitney U	Sum Ranks	of W	of W
Tobin_s_Q_1	5791	12232	11526	415.7991
Tobin_s_Q_0x	4379	8474	9180	415.7991

Number Sets of Ties = 9, Multiplicity Factor = 54

Exact Probability

Approximation Without Correction

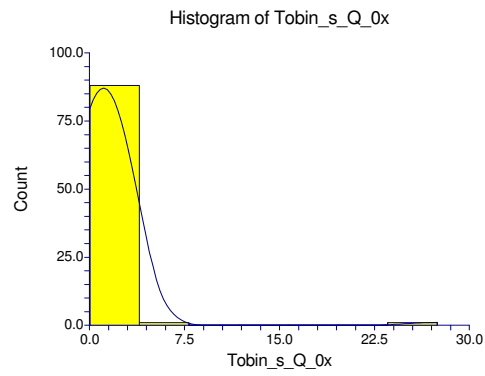
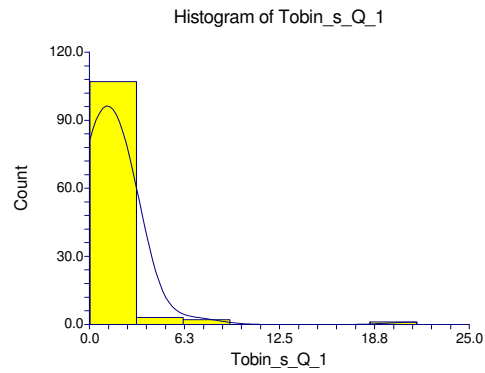
Approximation With Correction

Alternative	Prob	Decision		Prob	Decision	
Prob	Decision					
Hypothesis	Level	(5%)	Z-Value	Level	(5%)	Z-Value
Level	(5%)					
Diff<>0			-1.6979	0.089520	Accept Ho	-1.6967
0.089747	Accept Ho					
Diff<0			-1.6979	0.955240	Accept Ho	-1.6991
0.955353	Accept Ho					
Diff>0			-1.6979	0.044760	Reject Ho	-1.6967
0.044874	Reject Ho					

Kolmogorov-Smirnov Test For Different Distributions

Alternative	Dmn	Reject Ho if	Test Alpha	Decision
Prob				
Hypothesis	Criterion Value	Greater Than	Level	(Test Alpha)
Level				
D(1)<>D(2)	0.167847	0.1921	.050	Accept Ho
0.1027				
D(1)<D(2)	0.046903	0.1921	.025	Accept Ho
D(1)>D(2)	0.167847	0.1921	.025	Accept Ho

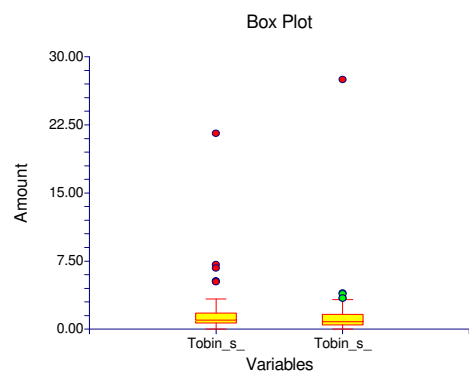
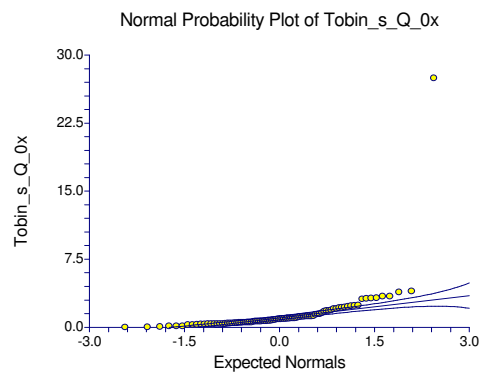
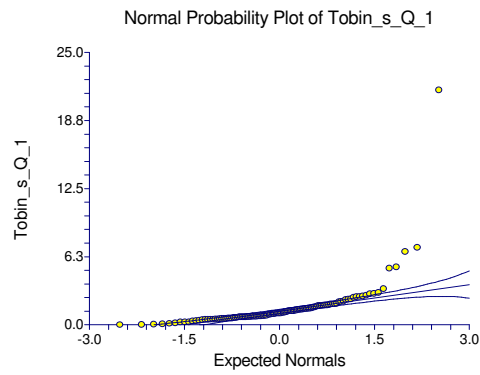
Plots Section



Two-Sample Test Report

Page/Date/Time 3 2008/07/25 11:56:24 AM

Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0



Two-Sample Test Report

Page/Date/Time 1 2008/07/25 11:56:56 AM

Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Descriptive Statistics Section

Standard Variable	Standard Count	Mean	95% LCL Deviation	95% UCL Error	of Mean	of Mean
ROA_1	113	0.0630177	0.1206853	1.135312E-02		
4.052295E-02		8.551245E-02				
ROA_0x	90	2.206667E-02	0.1733746	1.827529E-02	-	
1.424595E-02		5.837928E-02				
Note: T-alpha (ROA_1) = 1.9814, T-alpha (ROA_0x) = 1.9870						

Confidence-Limits of Difference Section

Variance Assumption	Mean DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	201	4.095103E-02	0.1463742	2.068007E-02		
4.18848E-04		8.148322E-02				
Unequal	152.86	4.095103E-02	0.2112432	2.151464E-02	-	
1.553386E-03		8.345545E-02				
Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9756						

Equal-Variance T-Test Section

Alternative Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power	Power
Difference <> 0	1.9802	0.049043	Reject Ho	0.504346	0.2702
Difference < 0	1.9802	0.975478	Accept Ho	0.000153	0.0000
Difference > 0	1.9802	0.024522	Reject Ho	0.631672	0.3665
Difference: (ROA_1)-(ROA_0x)					

Aspin-Welch Unequal-Variance Test Section

Alternative Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power	Power
Difference <> 0	1.9034	0.058868	Accept Ho	0.472743	0.2441
Difference < 0	1.9034	0.970566	Accept Ho	0.000200	0.0000
Difference > 0	1.9034	0.029434	Reject Ho	0.598751	0.3300
Difference: (ROA_1)-(ROA_0x)					

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
------------	-------	-------------	--------------

Skewness Normality (ROA_1)	-9.5084	0.000000	Reject normality
Kurtosis Normality (ROA_1)	7.1619	0.000000	Reject normality
Omnibus Normality (ROA_1)	141.7013	0.000000	Reject normality
Skewness Normality (ROA_0x)	-7.6789	0.000000	Reject normality
Kurtosis Normality (ROA_0x)	5.9634	0.000000	Reject normality
Omnibus Normality (ROA_0x)	94.5278	0.000000	Reject normality
Variance-Ratio Equal-Variance Test	2.0638	0.000298	Reject equal
variances			
Modified-Levene Equal-Variance Test	2.3456	0.127207	Cannot reject
equal variances			

Two-Sample Test Report

Page/Date/Time 2 2008/07/25 11:56:56 AM

Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Median Statistics

95% LCL	95% UCL			
Variable	Count	Median	of Median	of Median
ROA_1	113	0.077	0.066	0.091
ROA_0x	90	0.0555	0.042	0.067

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians

Mann	W	Mean	Std Dev	
Variable	Whitney U	Sum Ranks	of W	of W
ROA_1	6103.5	12544.5	11526	415.7831
ROA_0x	4066.5	8161.5	9180	415.7831

Number Sets of Ties = 46, Multiplicity Factor = 696

Exact Probability

Approximation Without Correction

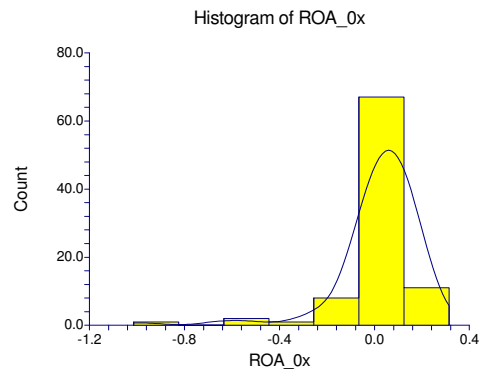
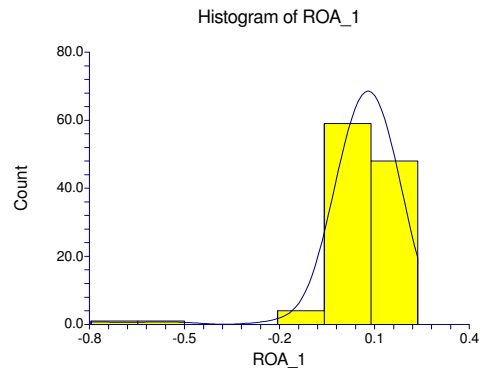
Approximation With Correction

Alternative	Prob	Decision		Prob	Decision	
Prob	Decision					
Hypothesis	Level	(5%)	Z-Value	Level	(5%)	Z-Value
Level	(5%)					
Diff<>0			-2.4496	0.014302	Reject Ho	-2.4484
0.014350	Reject Ho					
Diff<0			-2.4496	0.992849	Accept Ho	-2.4508
0.992873	Accept Ho					
Diff>0			-2.4496	0.007151	Reject Ho	-2.4484
0.007175	Reject Ho					

Kolmogorov-Smirnov Test For Different Distributions

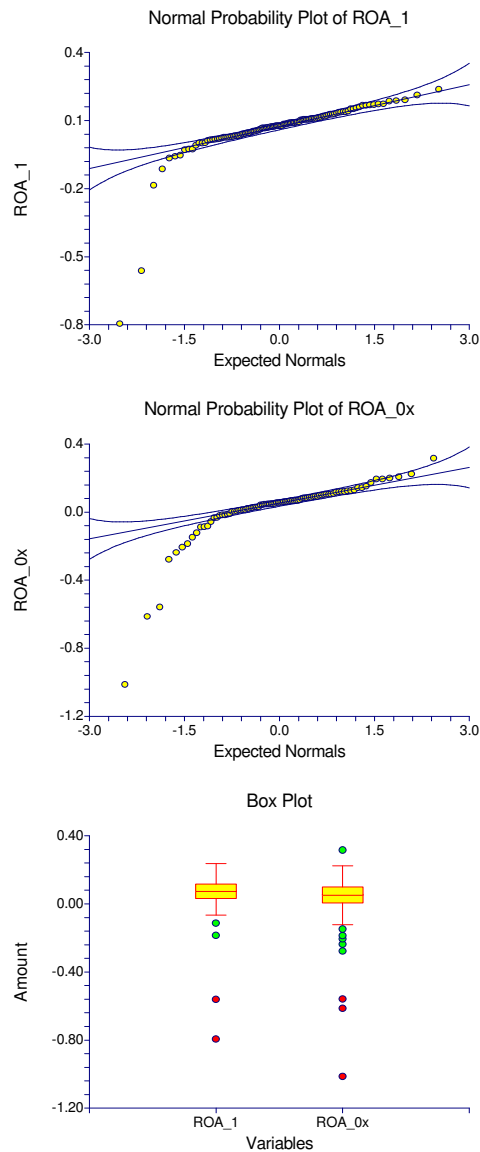
Alternative	Dmn	Reject Ho if	Test Alpha	Decision
Prob				
Hypothesis	Criterion Value	Greater Than	Level	(Test Alpha)
Level				
D(1)<>D(2)	0.210619	0.1921	.050	Reject Ho
0.0194				
D(1)<D(2)	0.048968	0.1921	.025	Accept Ho
D(1)>D(2)	0.210619	0.1921	.025	Reject Ho

Plots Section



Two-Sample Test Report

Page/Date/Time 3 2008/07/25 11:56:56 AM
Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0



Two-Sample Test Report

Page/Date/Time 1 2008/07/25 11:55:53 AM
Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Descriptive Statistics Section

Standard	Standard	95% LCL	95% UCL
----------	----------	---------	---------

Variable	Count	Mean	Deviation	Error	of Mean	of Mean
DY_1	113	2.772566E-02	2.159871E-02	2.031836E-03		
2.369984E-02		3.175149E-02				
DY_0x	90	2.656667E-02	3.466632E-02	3.654151E-03		
1.930595E-02		3.382739E-02				

Note: T-alpha (DY_1) = 1.9814, T-alpha (DY_0x) = 1.9870

Confidence-Limits of Difference Section

Variance	Mean	Standard	Standard	95% LCL	95% U
Assumption	DF	Difference	Deviation	Error	of Mean
Equal	201	1.158997E-03	2.814361E-02	3.976192E-03	-
6.634195E-03		8.952189E-03			
Unequal	141.77	1.158997E-03	4.084432E-02	4.18105E-03	-
7.106263E-03		9.424257E-03			

Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9768

Equal-Variance T-Test Section

Alternative Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power	Power
Difference <> 0	0.2915	0.770982	Accept Ho	0.059695	0.0131
Difference < 0	0.2915	0.614509	Accept Ho	0.026938	0.0046
Difference > 0	0.2915	0.385491	Accept Ho	0.089021	0.0217
Difference: (DY_1)-(DY_0x)					

Aspin-Welch Unequal-Variance Test Section

Alternative Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power	Power
Difference <> 0	0.2772	0.782028	Accept Ho	0.058729	0.0128
Difference < 0	0.2772	0.608986	Accept Ho	0.027382	0.0046
Difference > 0	0.2772	0.391014	Accept Ho	0.085504	0.0200
Difference: (DY_1)-(DY_0x)					

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (DY_1)	3.8089	0.000140	Reject normality

Kurtosis Normality (DY_1)	2.8573	0.004273	Reject normality
Omnibus Normality (DY_1)	22.6716	0.000012	Reject normality
Skewness Normality (DY_0x)	4.9337	0.000001	Reject normality
Kurtosis Normality (DY_0x)	2.4056	0.016146	Reject normality
Omnibus Normality (DY_0x)	30.1286	0.000000	Reject normality
Variance-Ratio Equal-Variance Test	2.5761	0.000003	Reject equal
variances			
Modified-Levene Equal-Variance Test	6.2806	0.013000	Reject equal
variances			

Two-Sample Test Report

Page/Date/Time 2 2008/07/25 11:55:53 AM
Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Median Statistics

95% LCL	95% UCL			
Variable	Count	Median	of Median	of Median
DY_1	113	0.027	0.023	0.031
DY_0x	90	0.013	0.007	0.023

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians

Mann	W	Mean	Std Dev	
Variable	Whitney U	Sum Ranks	of W	of W
DY_1	6025	12466	11526	412.6362
DY_0x	4145	8240	9180	412.6362

Number Sets of Ties = 39, Multiplicity Factor = 126834

Exact Probability Approximation Without Correction

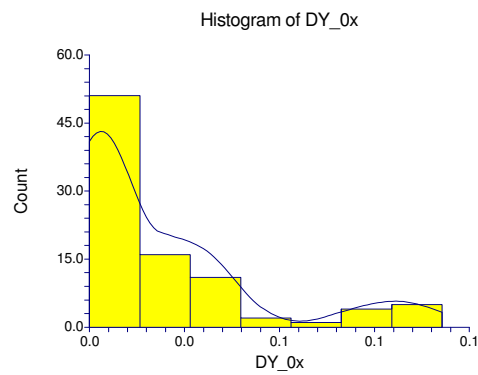
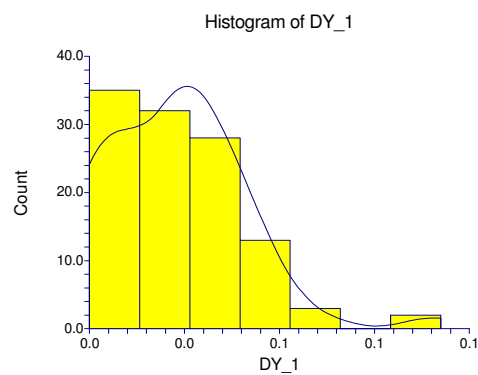
Approximation With Correction

Alternative	Prob	Decision		Prob	Decision	
Prob	Decision					
Hypothesis	Level	(5%)	Z-Value	Level	(5%)	Z-Value
Level	(5%)					
Diff<>0			-2.2780	0.022724	Reject Ho	-2.2768
0.022797	Reject Ho					
Diff<0			-2.2780	0.988638	Accept Ho	-2.2792
0.988674	Accept Ho					
Diff>0			-2.2780	0.011362	Reject Ho	-2.2768
0.011398	Reject Ho					

Kolmogorov-Smirnov Test For Different Distributions

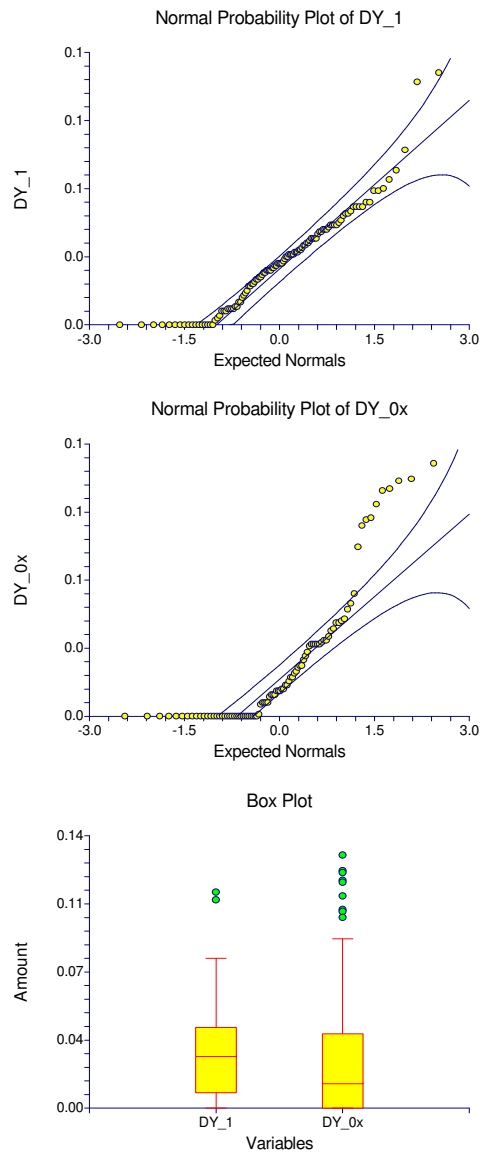
Alternative Prob Hypothesis Level	Dmn Criterion Value	Reject Ho if Greater Than	Test Alpha Level	Decision (Test Alpha)
D(1)<>D(2) 0.0037	0.245821	0.1921	.050	Reject Ho
D(1)<D(2)	0.093412	0.1921	.025	Accept Ho
D(1)>D(2)	0.245821	0.1921	.025	Reject Ho

Plots Section



Two-Sample Test Report

Page/Date/Time 3 2008/07/25 11:55:53 AM
Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0



Two-Sample Test Report

Page/Date/Time 1 2008/07/25 11:57:26 AM
Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Descriptive Statistics Section

Standard	Standard	95% LCL	95% UCL
----------	----------	---------	---------

Variable	Count	Mean	Deviation	Error	of Mean	of Mean
Debt_Equity_1	113	0.5153363	1.163377	0.1094413		
0.2984925		0.7321801				
Debt_Equity_0x	90	2.437944	17.17458	1.81036	-	
1.159202		6.035091				

Note: T-alpha (Debt_Equity_1) = 1.9814, T-alpha (Debt_Equity_0x) = 1.9870

Confidence-Limits of Difference Section

Variance		Mean	Standard	Standard	95% LCL	95% U
Assumption	DF	Difference	Deviation	Error	of Mean	of Mean
Equal	201	-1.922608	11.46129	1.619276	-	
5.096332		1.251115				
Unequal	89.65	-1.922608	17.21394	1.813665	-	
5.525961		1.680745				

Note: T-alpha (Equal) = 1.9600, T-alpha (Unequal) = 1.9868

Equal-Variance T-Test Section

Alternative Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power	Power
Difference <> 0	-1.1873	0.236500	Accept Ho	0.219034	0.0811
Difference < 0	-1.1873	0.118250	Accept Ho	0.324930	0.1295
Difference > 0	-1.1873	0.881750	Accept Ho	0.002396	0.0002
Difference: (Debt_Equity_1)-(Debt_Equity_0x)					

Aspin-Welch Unequal-Variance Test Section

Alternative Hypothesis (Alpha=.05)	T-Value (Alpha=.01)	Prob Level	Decision (5%)	Power	Power
Difference <> 0	-1.0601	0.291961	Accept Ho	0.182400	0.0625
Difference < 0	-1.0601	0.145981	Accept Ho	0.276664	0.0998
Difference > 0	-1.0601	0.854019	Accept Ho	0.003499	0.0003
Difference: (Debt_Equity_1)-(Debt_Equity_0x)					

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (Debt_Equity_1)	-7.2324	0.000000	Reject normality

Kurtosis Normality (Debt_Equity_1)	7.2483	0.000000	Reject normality
Omnibus Normality (Debt_Equity_1)	104.8450	0.000000	Reject normality
Skewness Normality (Debt_Equity_0x)	11.3267	0.000000	Reject normality
Kurtosis Normality (Debt_Equity_0x)	7.9122	0.000000	Reject normality
Omnibus Normality (Debt_Equity_0x)	190.8971	0.000000	Reject normality
Variance-Ratio Equal-Variance Test	217.9374	0.000000	Reject equal
variances			
Modified-Levene Equal-Variance Test	2.1548	0.143686	Cannot reject
equal variances			

Two-Sample Test Report

Page/Date/Time 2 2008/07/25 11:57:26 AM
Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

Median Statistics

95% LCL	95% UCL			
Variable	Count	Median	of Median	of Median
Debt_Equity_1	113	0.367	0.232	0.47
Debt_Equity_0x	90	0.4415	0.246	0.582

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians

Mann	W	Mean	Std Dev	
Variable	Whitney U	Sum Ranks	of W	of W
Debt_Equity_1	4777	11218	11526	415.7655
Debt_Equity_0x	5393	9488	9180	415.7655

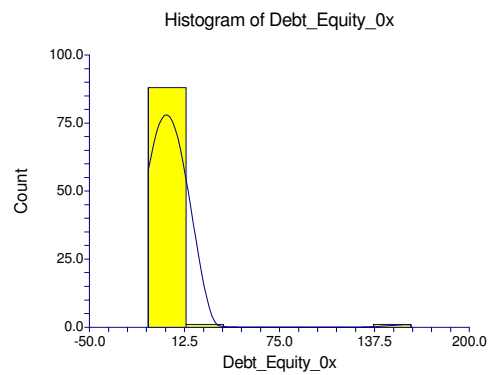
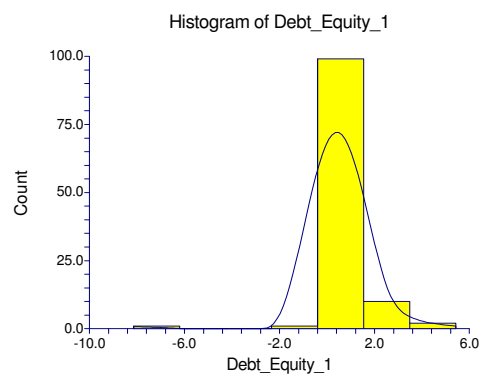
Number Sets of Ties = 12, Multiplicity Factor = 1404

Exact Probability		Approximation Without Correction				
Approximation With Correction						
Alternative	Prob	Decision		Prob	Decision	
Prob	Decision					
Hypothesis	Level	(5%)	Z-Value	Level	(5%)	Z-Value
Level	(5%)					
Diff<>0			0.7408	0.458813	Accept Ho	0.7396
0.459543	Accept Ho					
Diff<0			0.7408	0.229407	Accept Ho	0.7396
0.229772	Accept Ho					
Diff>0			0.7408	0.770593	Accept Ho	0.7420
0.770958	Accept Ho					

Kolmogorov-Smirnov Test For Different Distributions

Alternative Prob Hypothesis Level	Dmn Criterion Value	Reject Ho if Greater Than	Test Alpha Level	Decision (Test Alpha)
D(1)<>D(2) 0.4416	0.118289	0.1921	.050	Accept Ho
D(1)<D(2)	0.118289	0.1921	.025	Accept Ho
D(1)>D(2)	0.093609	0.1921	.025	Accept Ho

Plots Section



Two-Sample Test Report

Page/Date/Time 3 2008/07/25 11:57:26 AM
Database C:\Users\fredjac\Desktop\Dissertation\Dataset.S0

