CORPORATE GOVERNANCE, CEO COMPENSATION AND TOTAL SHAREHOLDER RETURNS IN SOUTH AFRICA

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TABLE OF CONTENTS

UNIVERSITY of the
WESTERN CAPE

UNIVERSITY of the
WESTERN CAPE

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WESTERN CAPE

DECLARATION

I declare that *"Corporate Governance, CEO Compensation and Total Shareholder Returns in South Africa"* is my own work, that it has not been submitted for any degree or examination in any other university, and that all the resources I have used or quoted have been indicated and acknowledged by complete references.

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Colin Michael Priem
September 2016

ABSTRACT

The on-going displeasure displayed by the media and business commentators, relating to apparent excessive and unwarranted executive directors' salaries, has increased since the financial turmoil experienced in 2008. The commentaries and reports suggest that corporate governance interventions are not strong enough to curb the excessive remuneration packages awarded to executives and specifically to Chief Executive Officers (CEOs).

The purpose of the research is to examine the factors that determine and/or shape the relationship between the Chief Executive Officer's (CEO's) compensation and the wealth created for shareholders. The investigation further seeks to find the corporate governance elements, systems and processes that assist in monitoring the CEO's remuneration and performance contract.

The null hypothesis is that poor corporate governance prevails in South African listed companies resulting in CEO compensation not being aligned to shareholder wealth creation.

The aim is to establish the effectiveness of South African listed companies' adherence to corporate governance measures in addressing the principal/agent problem, commonly referred to as the agency problem.

The research embraces a sample of the top 100 actively trading companies listed on the Johannesburg Stock Exchange (JSE) using secondary data.

The study builds on existing theories and provides knowledge from a South African perspective.

Keywords: Agency problem, board composition, CEO compensation, corporate governance, total shareholder returns

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This work is dedicated to Dulcie May, my wonderful mother, as the research process reflected many of her endearing characteristics, namely, at times being so complex, yet more often simply humbling, and though intense and serious, mostly fun and pleasing.

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Lastly, to my beautiful wife Grace, this research may be my own work, but the results thereof is ours, as without your support and understanding this would not have been possible.

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CHAPTER 1 – Introduction

1.1. Contextualising the study

Interest in the topic of executive remuneration has increased significantly since the last world-wide economic downturn, which manifested itself in 2008. This has captured attention and garnered extensive media commentary, with a number of articles targeting the remuneration, bonuses and share options granted to Chief Executive Officers (CEOs) of companies, across the globe.

Some of the media headlines from the United States of America (USA) include:

- Wall Street Journal (2009), "Executive Pay and the Financial Crisis: A Refresher Course".
- Business News (2009), "Study shows U.S. bank CEO pay dwarfs rest of world".
- New York Times (2010), "UBS Shareholders Criticize Pay".
- Washington Post (2014), "The pay gap between CEOs and workers is much worse than you realize".

Additionally, reports from the European Union (EU) and Great Britain reflected the following headline banners:

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- Guardian (2013), "Switzerland votes against cap on executive pay".
- International Business Times (2014), "Mind the Pay Gap: UK's Top Bosses Earn 131 Times More Than Their Employees".
- Independent (2015), "Excessive executive pay threatens British business, say business leaders".

The South African media have similar reports relating to executive remuneration and include the following headlines:

- Moneyweb (2011), "Whitey is SA's top earning executive – again. Total package of R627.6m worth every cent – Christo Wiese".
- Cape Times (2012), "SA shareholders slow to act on governance".
- Cape Times (2012a), "Tide swells against fat pay-outs for executives".
- Financial Mail (2013), "Executive Pay. Measuring the fat cats".
- Sunday Times (2013), "R76m - Mondi CEO was the best paid executive in SA".

Most of the above headlines represent reports that suggest CEOs, globally, were overpaid and the Moneyweb (2011) article is an example of this. The article relates to a major South African retailer's Chief Executive Officer's 2010 compensation package of R627.6 million and the package is reported as consisting of the sale of shares and options exercised of R594.5 million with the balance, R33.1 million, being salary and bonuses. According to the report, the options were earned over a period of 40 years.

An article in the Financial Mail (2013a) reflects the views of a director of PricewaterhouseCoopers (PwC) who informs that anger is mounting world-wide, at the growing gap between what executives earn and the wages of the lowest paid workers. Further, in an annual publication on executives directors' remuneration, PwC (2012) state that "coupled with discussions on economic and growth targets and the performance of South African companies, the topic of executive remuneration remained a very hot one in 2011 and 2012".

The media reports, specifically those alluding to the huge gap between general employees and executives and the considerable size of CEOs annual earnings, raise a concern as to how this applied in the South African setting, given the skewed income distribution in the country as measured by the Gini co-efficient (The World Bank 2013), where South Africa ranks the lowest amongst the emerging market countries. In support of this, Crotty and Bonorchis (2006:125) assert that the wage gap in South Africa widened to levels of 700 to 1 and more in 2005.

A further consideration, deliberated against the background of a series of global business failures seemingly due to corporate governance issues, was whether the supposed abnormal growth in executive remuneration was in line with the value businesses created for its owners.

Cheffins (2009:1), in a study investigating whether corporate governance had failed during the 2008 stock market crash, relates that "the financial turmoil surpassed anything encountered since the Great Depression". The author recounts that the United States banking sector had to be bolstered by government rescue schemes; that Bear Stearns, a global investment bank, was sold at a distressed price, Lehman Brothers went bankrupt and Goldman Sachs and J. P. Morgan Chase transformed into commercial banks. However, the author concludes that the failed and troubled companies' governance interventions were not passive and therefore, there should be no reason for the reform of corporate governance arrangements.

An article by Business Day (2014) provides a recent South African perspective by reporting on African Bank (ABIL), a top 100 company, listed on the Johannesburg Stock Exchange being placed under curatorship in August 2014 and in the process destroying billions of rand in shareholder value. Research by Sarra (2004) provides additional cases of business failures due to alleged mismanagement and/or corporate governance issues which include, Macmed (1999), Leisurenet (2000), Regal Treasury Bank (2001) and Saambou Bank (2002). It is reported that all of the above SA business failures are allegedly due to poor corporate governance.

1.2. Clarification of the research problem

In a capitalist economic system, described by Wuite (2009) as "an economic system whereby participants are in business to make a profit and ownership of assets is attributable to the private sector", it is assumed that the ultimate goal of a firm is to create sustainable wealth for its owners or shareholders. Listed companies are managed on a daily basis by executive directors who are normally recommended and appointed by the board of the company by way of a remuneration and/or nominations committee consisting of non-executive directors. Brigham and Daves (2010:4) refers to executive directors as managers whose primary objective should be to maximise shareholder wealth. The authors explain that the maximisation of shareholder wealth means maximising the fundamental or intrinsic price of the firm's common share and suggest that the executive directors of the firm have been empowered by the shareholders to make decisions to meet this objective.

Brigham and Daves (2010:9) state that this could create a potential conflict; in that the shareholders need to ensure that the directors (agents) act in the interest of the shareholders (principals) and not their own, at all times. In attempting to address this principal-agent problem, also referred to as the agency problem, remuneration packages should be designed to attempt to align the manager's interest with that of the owners.

A Harvard Business Review (2012) article titled "Compensation and the myth of the corporate superstar", highlights the issue of big bonuses being paid to CEOs. The authors assert that it is the belief of the current crop of CEOs that if they were not paid their bonuses, they would simply leave for another firm, implying a shortage of CEOs in the market. They suggest that this supposed competitive market for talented executives forms the basis of the problem regarding the process whereby the terms of the CEO's compensation are agreed. It is the authors belief that successful

CEOs not only leverage their intrinsic talents, but also their accumulation of firm-specific knowledge and that this particular skill set can only be developed over a long tenure with a company and is not necessarily replicable at other firms.

They conclude that firms would be better off finding candidate CEOs from within the firm or from a similar industry, with whom fair pay can be negotiated, at a level lower than what would be suggested by peer or market comparison. Their contention being that a compensation setting process that is reliant on peer/market comparisons is misguided, as the notion of a superstar CEO has been a fixture of business life for at least two decades and resides at the heart of today's executive pay controversies.

Their argument in respect of superstar CEOs, is supported by Collins (2001:32) in the book "Good to Great". The author states that ten of the eleven good-to-great CEOs that form part of the study, came from within the company and suggests that firms who employ charismatic, larger than life CEOs tend to implode or go backwards once the CEO departs.

According to Murphy (1998), the controversy around CEO compensation is nothing new. In a publication titled "Executive Compensation", Murphy (1998:1) states that "few issues in the history of the modern corporation have attracted the attention garnered by executive compensation in United States companies". It proposes that the widespread interest in executive pay is due to the following factors:

- The increase in CEO compensation, in that the median cash compensation paid to CEOs of S&P 500 companies has more than doubled since 1970 and 1996.
- The median total of realised compensation, including share option gains, has nearly quadrupled.
- High CEO salaries are associated with staff layoffs, plant closings and corporate downsizing.
- The bull market of the 1990's created windfalls for CEOs whose pay is increasingly tied to company stock-price performance.

The modern history of executive compensation research, which the author explains started in the early 1980's, tied in with the emergence and general acceptance of the agency theory. The article claims that the separation and control in modern corporations is due to the agency problem suggested by Berle and Means (1932) and formalised by Jensen and Meckling (1976).

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Towers Watson (2011), a leading global professional services company, in an article titled "Getting executive pay right" relates that British executive pay has increased at a faster rate than pay for most employees reversing the trend from the Second World War to about the 1970's which saw the pay of many broad employee groups increase at a faster rate than pay at executive level. They suggest four main reasons for this:

- The changing role of directors.
- Labour market developments.
- Changing pay structures.
- Governance interventions.

They proclaim that this is not just a British phenomenon, but something that has happened in most other developed economies.

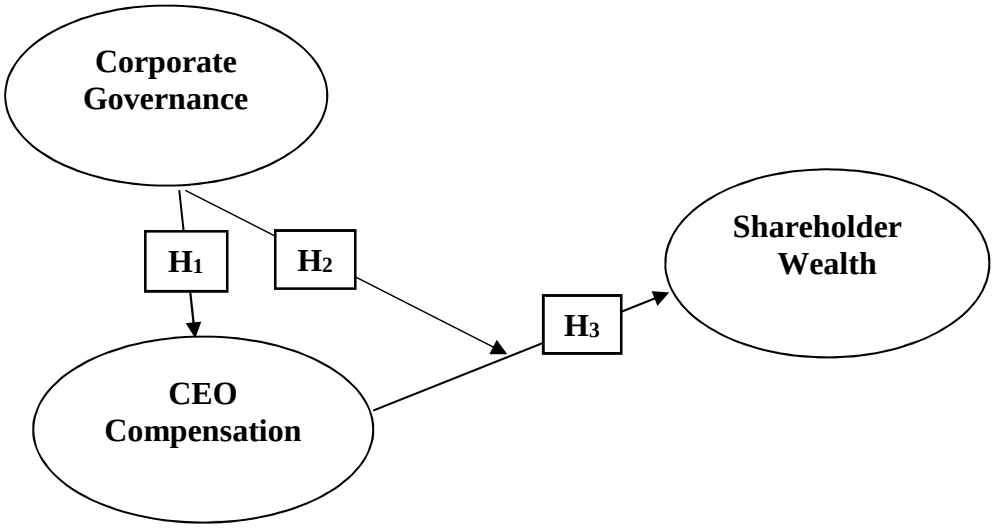
Research by Bebchuk and Fried (2003) which centres on publicly traded US companies that do not have a controlling shareholder relates that the "optimal contracting" approach assumes that boards, design compensation schemes to provide managers with efficient incentives to maximise shareholder value, thus negating the agency problem. However, their analysis of directors' incentives and circumstances suggests that directors' behaviour is also subject to an agency problem which undermines the board's ability to effectively address the agency problem in the relationship between executives and shareholders. Their reasoning is that independent directors wish to be re-appointed to the board at the end of their term and typically, the recommended annual CEO's pay arrangement provided by management, is normally agreed to.

1.3. Research problem and hypothesis

The afore- mentioned context and introduction, raises the following questions,

- Is there an alignment between CEO compensation and the value created for shareholders?
- What are the corporate governance interventions that monitor the actions of CEOs?

If it is assumed that there are corporate governance controls that align the CEO's (agent's) interest with that of the shareholders (principals), then a theoretical model should suggest that good corporate governance prevails when CEOs are appointed and managed, which would result in their compensation contracts being designed to ensure shareholder wealth creation. A diagram representing the key components of this model is as follows:



Given the implications drawn from the above model, the following hypotheses are proposed:

H_1: Corporate governance (controlling variable) ensures that CEO compensation packages are adequately designed to negate the agency problem.

H_2: Corporate governance (mediating variable) intercedes in the CEO's interests and shareholder relationship ensuring the alignment of CEO compensation to shareholder wealth created.

H_3: The alignment of the CEO's interests to that of the owners which ensures shareholder wealth creation.

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However, given the negative media headlines and speculation, it appears as if an opposing assumption prevails, thus the following *null* hypothesis is proposed:

H_0: Poor corporate governance prevails in South African listed companies resulting in CEO compensation not being aligned to shareholder wealth creation.

The theory's concepts are deconstructed into the following measures:

- Corporate governance: A four point corporate governance index (CGI) of key board composition and ownership elements.
- CEO compensation (CC): Components of compensation which include basic salary, short term bonus and fringe benefits.
- Shareholder wealth: Total shareholder returns (TSR), which is a suggested proxy for shareholder wealth creation.

1.4. Research framework and methodology

In an attempt to answer the research questions in a South African context, a longitudinal, quantitative research approach is adopted and the study examines a sample of the top 100 Johannesburg Stock Exchange (JSE) listed companies, covering a 10 year period ending in December 2013. The research endeavours to establish whether a relationship exists between the following:

- The strength of corporate governance controls.
- The compensation paid to CEOs.
- The value created for shareholders.

The data for the concept measures were obtained from the annual reports of the sample companies and the I-Net Bridge database. Regression and correlation analysis is used to test the relationships.

The chapters in this study are organised as follows:

- A review of the literature relevant to the topic.
- An account of the research methods employed.
- The data gathering and preparation process.
- The statistical analysis utilised and the results thereof.

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It culminates with chapters interpreting and discussing the results, providing insights into problems encountered and a concluding chapter that includes recommendations for future research.

CHAPTER 2 - Literature review

2.1. Overview

This chapter aims to provide a thorough review of the literature relating to economic and business management research. Specifically, the main objective is to gain a comprehensive understanding of the topic and to attempt to collate the concepts, constructs and theories relating to:

- The principal- agent problem (agency problem).
- Corporate governance.
- Shareholder wealth creation.
- CEO compensation.

The review seeks to assist in refining the research problem from the conceptual, to a testable hypothesis stage and to confirm the choice of the statistical analysis process.

The CRAAP test criteria suggested by California State University (2010) was broadly employed to filter the literature. This assists in establishing the appropriateness of an article in terms of whether it is:

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- **C**urrent, in respect of when it was written and whether it is the latest version.
- **R**elevant, regarding the research topic and provides a convincing/compelling theoretical argument with interesting empirical results.
- **A**uthoritative, in that it is a peer-reviewed journal article and also extensively cited by other researchers. The authors have credible credentials, qualifications and associations.
- **A**ccurate**,** checking confirms that sources are reliable, truthful and correct.
- **P**urpose, establishing whether the authors were objective and considerate of other views or biased, e.g.; an opinion-piece or propaganda/marketing.

The literature reviewed is planned around using these theories and concepts as a framework with an initial focus on international articles and then South African published articles on the topic.

2.2. The agency problem

By redefining the research questions introduced in Chapter 1, the intention of the research would be presented as an attempt to:

- Measure the alignment of CEO compensation (CC) to shareholder returns for SA listed companies.
- Establish whether corporate governance (CG) measures have any impact on the CC and shareholder return relationship.

The above objectives generally reflect concepts contained in the principal-agent problem, namely:

- Principal (Owner/Shareholder): The concept, firm's performance, with total shareholder returns (TSR) as a proxy for shareholder value.
- Agent (Executive Director/CEO): The concept of CEO compensation.

In the previous chapter, the views of Brigham and Daves (2010) and Bebchuk and Fried (2003) were introduced relating to the agency problem.

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Jacoby (2005) relates that in the book by Berle and Means (1932) titled "The modern corporation and private property" it is observed that "large American corporations had ceased being controlled by their owners and that control had passed into the hands of a new class of professional managers." The author recounts that this is due to the wealth of founding families being split up and new shares being made available to millions of individuals which ultimately left executives with the discretion to do what they considered to be in the best interest of the corporation.

In an analysis article by Stigler and Friedland (1983) on the work of Berle and Means (1932), they describe the main theory of the work as follows:

- The assumption that an individual is protected in the right to use their property as they wish and to receive the full benefits of its use for profit, is a real incentive for the efficient use of any industrial property they may possess.
- In the so called public corporation, such an assumption does not exist, as it is no longer the individual who uses their own wealth, but the managers of the corporation.

- Those in control of the individual's wealth and in a position to produce profits, the managers, are no longer entitled to the bulk of such profits.
- The managers who control the fortunes of the modern corporation typically own a fraction of the company's shares and the returns from running the company profitably, accrue to them minimally.
- The shareholders to whom the profits of the corporation accrue, cannot be motivated by those profits to a more efficient use of the property, since they have surrendered ownership of it to those in control of the enterprise.

An investigation by the researchers on the shareholding of 200 non-financial United States corporations during the time of the Berle and Means (1932) opus, confirms that there was no effective shareholder in 44% of these corporations thereby deducing that a large number of shareholders had no effective say in the management of the corporations they had invested in.

The work by Smith (1776:941) in the book titled "Wealth of Nations" refers to an agency problem by relating that the directors of joint stock companies, being the managers of other peoples' money and not their own, cannot well be expected to be as vigilant as the partners in private companies would be and in some instances would be more predisposed to enriching themselves. Eisenhardt (1989) describes the agency problem as an ever-present agency relationship and that this forms part of agency theory. The author suggests that two problems can occur in agency relationships:

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- The agency problem; when the desires and goals of the principal and agent conflict and it is problematic and costly for the principal to verify what the agent is actually doing.
- Risk sharing; the principal and agent have different attitudes toward risk.

Agency theory is described by Coles, McWilliams, and Sen (2001) as a focus on the resolution of conflicts of interest between principals and agents to ensure that a firm's managers act in the interests of its shareholders and further asserts that firms can employ interventions to align the interests of the parties and to monitor the activity of agents (managers). The authors suggest two important mechanisms that can be employed to align the interests of managers (CEOs) and owners (shareholders):

- Organisational monitoring: Board and leadership structure.
- CEO incentives: Compensation and ownership.

Additionally, the optimal contracting view, proposed by Bebchuk and Fried (2003), recognises that managers suffer from an agency problem and do not normally seek to maximise shareholder value. The two governance factors that Schooley, Renner and Allen (2010) offer which may reduce the agency problem, are:

- Board composition, "independent" if the majority of the directors are non-executive.
- Leadership structure, regarded as "split" if the CEO is not the chairperson of the board.

The afore-mentioned literature highlights an agency problem being referred to more than two hundred years ago by Smith (1776) and that the problem developed into a theory with numerous views and suggestions to alleviate it which alludes to robust corporate governance measures being a key component in aligning the principal-agent relationship.

2.3. Corporate governance

2.3.1. Definition

Corporate governance is defined by OECD (2004) as, "a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined".

The British Cadbury (1992) report, describes corporate governance as "the system by which companies are directed and controlled. Boards of directors are responsible for the governance of their companies. The shareholders' role in governance is to appoint the directors and the auditors and to satisfy themselves that an appropriate governance structure is in place". The report further asserts that the responsibilities of the board include:

- Setting the company's strategic aims.
- Providing the leadership to put them into effect.
- Supervising the management of the business.
- Reporting to shareholders on their stewardship.

The Cadbury (1992) and OECD (2004) definitions include references to, structure, strategic aims, objectives, leadership, supervision and monitoring.

2.3.2. Corporate governance measures

The earlier examination of the literature on the agency problem, offer suggestions and the opinions of researchers regarding the methods to be engaged which may enable the effective monitoring of the relationship between the board and its shareholders. The suggestions include, majority independent (non-executive directors) on the board and optimal and performance related CEO compensation contracts, amongst other.

A Baysinger and Butler (1985) study, that spans a period from 1970 to 1980, reveals that American firms with a board that had a higher proportion of independent (non-executive) directors earlier, namely, beginning 1970's, showed higher performance at the end of 1980. This result was supported by the later studies of Core, Holthausen and Larcker (1999) and Coles et al (2001).

Board independence is supported by Hertig (2005) who proposes that reforms can be divided into three broad categories. Firstly, the reinforcing of the powers of shareholders and auditors which is aimed at reducing board discretion, secondly, improving board independence and finally, targeting director incentives through compensation and liability provisions. Research by Bebchuk and Weisbach (2010:943) agrees by suggesting that boards would be more effective if the structure had more independent directors and comments on the reforms, post the Enron and WorldCom scandals, introduced by stock exchanges to increase board independence requirements.

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Prior research by Klein (1998) contradicts the above suggestions, as the author found no association between firm's performance and overall board composition. However, a positive relationship was found between the percentage of inside directors on finance and investment committees and accounting and share market performance measures.

Gompers, Ishii and Metrick (2003) assert that the relationship between investors and managers is a power-sharing association that is defined by the rules of corporate governance. This is likened to corporations being republics and that the ultimate authority should rest with the voters, namely, the shareholders. The shareholders elect directors who delegate most decisions to the managers. This power-sharing relationship is dependent on a specific set of governance rules that could create a democracy where the power vests with the shareholders which would allow an easy process to replace directors or, on the other extreme, a dictatorship, where the shareholders ability to replace the directors are intensely restricted.

The Gompers et al (2003) research uses a 24 element "Governance Index" to proxy for the level of shareholder rights and finds that firms with strong governance have higher firm value, profits, sales growth and lower capital expenditures. The Core, Guay and Rusticus (2006) study concurs with Gompers et al (2003) and finds that firms with weak shareholder rights show significant operating under-performance. However, their overall results cannot convincingly show that weak governance is the cause of poor shareholder returns.

A study by Larcker, Richardson and Tuna (2007) redefines the components used in the Gompers et al (2003) governance index. They find that their 14 dimensional governance index has some ability to explain future operating performance and future excess share returns. Subsequent research by Bhagat and Bolton (2008) supports these findings and reports that the indices; share ownership, the separation of the CEO and chairperson positions, is positively correlated to better current period and subsequent period operating performance. A research paper by Varshney, Kaul and Vasal (2012) provide a perspective from India using a governance index to proxy for performance. They find that there is a positive correlation between high governance index firms when related to the economic value added (EVA) company performance measure.

In a later study, Bhagat, Bolton and Romano (2008) caution that governance indices are imperfect instruments from which to draw inferences regarding a firm's quality or future share performance. They postulate that "it would be difficult for an index, or any one variable, to capture nuances critical for making informed decisions." Opposing results are reported by Johnson, Moorman and Sorescu (2009), who reveal that for firms sorted on strong governance indices, no long term abnormal returns are observed.

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2.3.3. Regulatory governance measures

Notwithstanding, the afore-mentioned theories and methods discussed and suggested by researchers of corporate governance, it should be noted that exchange listed firms are highly regulated in terms of the laws of the countries in which they operate. With specific reference to the USA and the UK, there are a number of Acts that have been promulgated and agencies formed to improve and monitor the measures of corporate governance. These include:

- Rigid stock exchange listing requirements.

- The USA's Sarbanes–Oxley Act 2002 (SOX): According to Ernst and Young (2012), the primary purpose of the legislation is to increase investor confidence in the financial reports provided by corporations.
- Securities Exchange Commission (SEC): A U.S. government agency that oversees securities transactions, activities of financial professionals and mutual fund trading to prevent fraud and intentional deception (U.S. Securities and Exchange Commission 2016).
- The US Public Company Accounting Oversight Board (PCAOB 2016): The PCAOB is a non-profit corporation established by the US Congress to oversee the audits of public companies in order to protect investors and the public interest. The PCAOB also oversees the audits of brokers and dealers, including compliance reports filed pursuant to federal securities laws, to promote investor protection.
- UK Financial Conduct Authority (FCA 2016): The FCA replaced the Financial Services Authority from April 2013 and is the prudential regulator for over 24,000 firms. The Prudential Regulation Authority (PRA) has become the regulator of banks, building societies, credit unions, insurers and designated investment firms.
- UK Corporate Governance Code (FRC 2014): First produced in 1992 by the Cadbury Committee. The Code of Best Practice which forms part of the Cadbury report was implemented by the London Stock Exchange (LSE) on a comply or explain basis and included the issues of separating the role of Chief Executive Officer (CEO) and Chairman; suggested the use of non-executive directors (NEDs) and the desirability of independence, recommended the appointment of NEDs to an audit committee of the board of directors, all in the interests of providing some oversight and checks and balances to corporate decision making.
- UK Financial Reporting Council (FRC 2014): The audit regulator for the United Kingdom which promotes high levels of audit quality and contributes to the international debate on the future of the audit market. The FRC also promotes high quality corporate governance and reporting, publishing Codes and Standards that companies, auditors, actuaries and accountants adopt.

2.3.4. Corporate governance – A South African perspective

Sarra (2004:21) states that "corporate governance….involves creating the proper incentives for individuals in the management of the corporation." The article suggests that in Sub-Saharan Africa, the governance debate is framed by the tension between the need to attract foreign investment and the need to address pressing social, economic and environmental issues.

In a review of the developments in South African corporate governance since the end of apartheid, West (2009) asserts that South African companies, like many other Commonwealth countries, have corporate structures that generally resemble those of the UK and operate in a corporate governance environment that could be considered a modified Anglo-American corporate governance system. The review suggests that links to this system appear to have strengthened given:

- The adoption of international financial reporting standards (IFRS) in 2005.
- The legislating of the Auditing Professions Act in 2005.
- The number of South African companies that have moved their primary listings to the UK or USA.

Similar to the USA and UK, corporate governance in South Africa is further improved by, government appointed commissions, government legislation and regulation authorities. Key examples of these are:

- The Companies Act 2008

  According to Bowman Gilfillan (2014), the groundwork for the preparation of the Act was produced in a 2004 policy paper produced by the Department of Trade and Industries (dti), which identified five economic growth objectives, together with specific goals related to each of them, as being necessary to achieve a company law regime that would provide a protective and fertile environment for economic activity. These five objectives that the intended company law should promote and encourage are:

  - Competitiveness and development of the South African economy by means of simplifying the law.
  - Innovation and investment in South African markets and companies by being flexible
  - The efficiency of companies and their management.
  - Transparency and high standards of corporate governance.
  - Investment in South African markets and companies by providing for a predictable and effective regulatory environment.

  The above objectives and an additional goal, namely, harmonisation, ensuring that company law should be made compatible and harmonious with best practice jurisdictions internationally, are specifically addressed in the Companies Act of 2008 which came into effect on the 1st of May 2011.

- JSE listing requirements (JSE 2016)

  The listings requirements contain the rules and procedures governing new applications, all corporate actions and continuing obligations applicable to issuers and issuers of specialist securities. They are furthermore aimed at ensuring that the business of the JSE is carried on with due regard to the public interest.

- Promotion of Access to Information Act, 2000 (Act No. 2. 2000)

  The act gives effect to the constitutional right of access to any information held by the State and any information that is held by another person and that is required for the exercise or protection of any rights.

- Financial Services Board (FSB 2016)

  The FSB is an independent institution established by statute to oversee the South African Non-Banking Financial Services Industry in the public interest. Its mission and vision are to promote and maintain a sound financial investment in South Africa.

- Independent Regulatory Board for Auditors (IRBA 2016)

  The function of the IRBA is to help create an ethical, value-driven financial sector that encourages investment, creates confidence in the financial markets and promotes sound practices.

- The South African Institute of Chartered Accountants (SAICA 2015)

  The mission of SAICA is to promote and lead the chartered accountancy profession so as to create sustainable value for its members and other stakeholders by, amongst other:

  - Fostering ethics, integrity, sound governance and good citizenship at an individual and corporate level.
  - Enhancing the quality of business information and reporting for the benefit of all stakeholders.
  - Working with international professional bodies and organisations to establish and maintain standards for the chartered accountancy profession and global economy.

- King reports on governance (IoDSA 2009)

  Rossouw, van der Watt and Malan (2002) recounts that the first King report on corporate governance in 1994 created unprecedented interest in the topic in South Africa. The article provides a view of the corporate landscape going back to the 1980's, the existing laws and agencies that enforces good corporate behaviour and reviews of possible future governance controls. In a subsequent article, Rossouw (2005) reveals that the inclusive model of corporate governance was first introduced in 1994 and has been enhanced in the second King Report

(referred to as King II) in 2002 by presenting numerous motivations for adopting an inclusive approach which include:

- The long-term sustainability of companies.
- Respect for the local community and the society in which a company operates.
- The need to earn a license to operate from all stakeholders of the corporation.

According to IoDSA (2009), the third King report (King III) on corporate governance in South Africa which came into effect in September 2009, became necessary due to the new Companies Act of 2008 and the changes in international governance trends. The publisher further states that 'following King II, the Johannesburg Stock Exchange Limited (JSE) required listed companies to include in their annual report a narrative statement as to how they had complied with the principles set out in King II, providing explanations that would enable stakeholders to evaluate the extent of the company's compliance and stating whether the reasons for non-compliance were justified'.

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As the recommendations in the report are technically non-regulatory, that is, not enforceable by law, an "apply or explain" approach is adopted and its practical execution is reported by IoDSA (2009) as follows:

'It is the legal duty of directors to act in the best interests of the company. In following the 'apply or explain' approach, the board of directors, in its collective decision-making, could conclude that to follow a recommendation would not, in the particular circumstances, be in the best interests of the company. The board could decide to apply the recommendation differently or apply another practice and still achieve the objective of the overarching corporate governance principles of fairness, accountability, responsibility and transparency. Explaining how the principles and recommendations were applied, or if not applied, the reasons, results in compliance. In reality, the ultimate compliance officer is not the company's compliance officer or a bureaucrat ensuring compliance with statutory provisions, but the stakeholders'.

Further, the report reveals that there are examples of exchange listed South African companies that have not followed the recommended practices. However, in support of the 'apply or explain' approach, these companies provided reasons why the practice they adopted was in the best interests of the company. The report further states that South African listed companies are regarded by foreign institutional investors as being among the best governed of the emerging economies in the world. It reports that, South Africa has benefited from its listed companies'

following good governance principles, which was evidenced by the significant capital inflows into South Africa before the global financial crisis of 2008.

2.3.5. Summary

The academic articles and supplementary analysis provides interesting insights into the world of corporate governance. A better understanding of the underlying theories have been obtained with specific reference to the:

- Assumed variables and components of corporate governance.
- Indices created by various researchers to proxy for corporate governance.
- Regulatory environments in which companies operate.

2.4. Shareholder wealth and the firm's performance

Bacidore, Boquist, Milbourn and Thakor (1997) suggest that the firm's performance measures used in the design of executive remuneration plans should be aligned with changes in shareholder wealth and should not be subject to all the "noise" inherent in a firm's share price.

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Murphy (1998) avers that an executive's wealth is directly (explicitly) tied to the principal's objective, namely, creating shareholder wealth through shareholding and share options and in addition, indirectly (implicitly) tied to share price performance through accounting based bonuses and in year to year adjustments in salary, bonuses and share option grant sizes. The variable for firm's performance in the study refers to two shareholder value measures, namely:

- The rate of return realised by shareholders.
- The rate of return on the common share, but ignores share issues and repurchases.

Apart from the above, there are a number of accounting and non-accounting measures that are used to measure firm's performance and shareholder wealth maximisation. In what follows, consideration will be given to a number of different measures that proxy for performance and by implication, shareholder wealth creation, when evaluating the relationships between company performance, corporate governance and CEO compensation.

2.4.1. ROE and ROA

Return on equity (ROE) is described by Higgins (2007) as net income divided by shareholders' equity, whereas return on assets (ROA) is defined as net income divided by assets. The author states that ROA is a measure of the efficiency with which a company allocates and manages its resources and differs from ROE in that it measures returns as a percentage of the money provided by shareholders and creditors, whilst ROE only measures the percentage return based on the money provided by the owners.

A study by Baysinger and Butler (1985) on the effects of corporate governance variables on company performance introduces relative financial performance (RFP) as a measure to proxy for firm's performance. RFP is calculated by dividing the firm's return on equity (ROE) by the average ROE of all the firms in its primary sector. ROE and ROA are two of the four performance variables used in a study by Abowd (1990) attempting to establish the effects of performance based compensation on company performance. A South African article by Theunissen and Oberholzer (2013) uses ROE as one of the measures for the company's performance variable.

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The use of ROA as a proxy for the firm's performance is employed in research by Core et al (1999) which suggest that firms with greater agency problems perform worse. In a later investigation on the Gompers et al (2003) work, Core et al (2006) repeats the use of ROA to measure firm's performance. Bhagat and Bolton (2008), also in replicating the Gompers et al (2003) study, use firm performance variables that include ROA. In subsequent research by Bhagat et al (2008), ROA for the current, next year and next two years is used to measure company performance.
A modified version of ROA (less depreciation) is utilised by Ertugrul and Hegde (2009) for company performance when compared to corporate governance ratings and an adjusted measure of ROA is used by Pissaris, Jeffus and Gleason (2010) when examining the impact of pay disparity and corporate governance on corporate performance

2.4.2. Tobin's Q

A Mehran (1995) study which suggests that it provides evidence for supporters of incentive compensation, uses Tobin's Q as a proxy for performance which is measured by the ratio of the market value of the firm's securities to the replacement cost of its tangible assets.

Attempting to find evidence as to whether corporate governance predict firm's market values in Korea, Black, Jang and Kim (2006) use Tobin's Q to proxy for the firm's value.

Tobin's Q is also the preferred unit of measure of an enterprise's valuation in an article by Bebchuk, Cohen and Ferrell (2009) when analysing their six provision corporate governance entrenchment index as a predictor of a firm's value and is included as a performance measure in the Bhagat and Bolton (2008) examination.

2.4.3. Economic value added (EVA)

The Varshney et al (2012) study that replicates the Gompers et al (2003) research uses EVA as the primary metric to measure firm's performance.

Bacidore et al (1997) asserts that although the most appropriate measure of shareholder value is the return shareholders earn through price appreciation and dividends, EVA is a good proxy in terms of its correlation with the total shareholder return (TSR) measure of shareholder value creation. However, they propose that a better measure of the capital used in the firm, for any period of time, is the market value of the firm at the beginning of the period which leads to a refinement of the EVA measure, termed refined economic value added (REVA).

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A South African perspective is provided by West (2006) in an article on corporate governance, who recommends the use of EVA as a performance indicator and is supported by De Wet (2012) proposing that EVA and market value add (MVA) are better measures than that of traditional accounting performance measures such as earnings per share (EPS), ROA and return on equity (ROE).

2.4.4. Total shareholder return (TSR)

Bacidore et al (1997) suggest that TSR is the most appropriate measure of shareholder wealth and it is also found to be the measure most commonly used by researchers in the literature consulted. PWC (2012) provides a South African perspective, proposing that earnings per share (EPS) and TSR are two key performance indicators that should be included when designing executive remuneration packages, specifically targeting LTIs.

Jensen and Murphy (1990) use TSR exclusively in their research article on performance pay and management incentives. Concurring with this, the Dalton and Aguinis (2013) study, suggest that TSR, which in their opinion is a performance measure seldom relied on when examining the governance and firm's performance relationship, is a superior metric because it has a direct connection to shareholders.

In research by Coombs and Gilley (2005), where stakeholder management (SM) is employed as a predictor of CEO compensation and its effects on financial performance. Firm size, ROA and TSR are employed as measures of financial performance. This is supported by an Ericson (2011) article reviewing the performance standards that should be considered when benchmarking executive incentive pay which includes total shareholder return (TSR) as one of the measures.

The Farmer, Archbold and Alexandrou (2013) research provide evidence from the UK of the use of TSR to proxy for the firm's performance, when comparing CEO compensation to relative performance evaluation (RPE). TSR also proxies for shareholder wealth in the Haynes, Campbell, and Hitt (2014) study that examine the effects of the concept executive greed on company wealth. A European analysis on corporate governance, industry dynamics and firm' performance by Krafft, Qu and Ravix (2008) rely on TSR as the measure for firm's performance.

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The studies by Abowd (1990) and Core et al (1999) includes total shareholder return (TSR) as a measure of company performance. In a later investigation Core et al (2006) again uses TSR to measure firm's performance.

Edwards (1994) in an article suggesting the use of TSR as the measurement for compensation plans which is supported by Gompers et al (2003) as a measure of choice in the research article which appears to have provided the benchmark from a corporate governance index perspective and is extensively studied, replicated and cited.

2.4.5. Summary

In one of the few South African studies, an investigation by Scholtz and Smit (2012) on the relationship between short-term executive compensation and company performance, suggest the following less often used measures to proxy for performance:

- Turnover (Sales).
- Earnings before interest tax depreciation and amortisation (EBITDA).
- Total assets.
- Share price.

In conclusion, an overwhelming number of the statistical analysis reviewed on similar research, include TSR as a measure for shareholder wealth.

2.5. CEO compensation

The preceding literature suggests that the design of a CEO's remuneration contract could play a positive role in alleviating the agency problem. Murphy (1998) asserts that most executive pay packages are made up of four basic components, namely:

- A base salary.
- An annual bonus tied to accounting performance.
- Share options.
- Long-term incentive plans.

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Von Glinow (1985) submits that the design of organizational reward systems that explicitly addresses attraction, evaluation, and retention of valued professionals is offered within four cultural contexts: the Apathetic -; the Caring -, the Exacting - and the Integrative Culture. The article suggests one would place the CEO in the Exacting culture given that within this culture, performance expectations are high and individuals are expected to be at a sustained level of high performance. A typical reward system suggested for this dimension includes profit sharing and share ownership with firm's performance being the sole evaluation measure. The research further reveals that top executives are increasingly negotiating formal employment contracts that typically last five years which specifies minimum base salaries, target bonus payments and severance arrangements.

A research article by Abowd and Kaplan (1999) which considers the implications of the Murphy (1998) study, deconstructs CEO compensation into the following four components:

- Salary, being cash compensation defined at the beginning of the annual pay cycle.
- Annual bonus, defined as cash compensation at the end of the annual pay cycle.

- Benefits, being the company's cost to provide retirement income, health care and other services evaluated on an annual basis.
- Long-term compensation, the annualised present value of any cash, or cash equivalent that is based on outcomes over periods of more than one year.

Bender and Moir (2006) report that the current tendencies governing executive pay in the UK include:

- Market benchmarks that determine salary and bonus levels.
- High levels of performance related pay.
- A desire for executives to hold equity in their companies.
- Disclosure of TSR compared to an index.
- A perceived need for conformity in order to legitimise policies.

Further research on UK companies by Conyon and Peck (1998), explain the effects of board control and remuneration committees on determining management compensation, which exclude some measures of compensation such as share options as the data was not easily available. Their measures for compensation consisted of salary, bonus and miscellaneous earnings.

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In a Hambrick and Finkelstein (1995) study on CEO pay changes, compensation is measured as the sum of cash pay, described as salary, bonus, and miscellaneous fringe benefits, plus the value of stock options granted during the year, with stock options priced by way of a modified version of the Black-Scholes option valuation model.

South African views are provided by Bussin and Huysamen (2004) whose study have components of remuneration that include base pay, fringe benefits, short and long term incentives and Scholtz and Smit (2012) in their investigation on JSE's alternative exchange (AltX) listed companies, who employ a total cash remuneration (excluding share options) measure, which include a base salary, benefits and annual bonus.

Additional South African related articles include research by De Wet (2012) employing the dependent variable, total directors' remuneration (TDR) to proxy for CEO compensation. The components are made up of the basic salary, bonus and options and the data was obtained from the McGregor BFA database. However no explanation is provided as to how the share options value

was arrived at. In their data envelopment research approach on JSE listed companies, Theunissen and Oberholzer (2013) include base pay, prerequisites and pension (other benefits), annual bonus and long term incentives (gains on shares) as a measure for remuneration.

When reviewing the literature, there is general consensus that the components of CEO compensation include four basic elements:

- A base salary.
- Other fringe benefits such as travel, pension and medical aid costs to company.
- An annual bonus, also referred to as short term incentive (STI).
- Share options, which acts as an incentive to possibly reward the meeting of short and long term performance objectives.

It is observed that some studies exclude the share option component, due to a lack of information when attempting to include share options as a component of the compensation variable.

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2.6. Overall summary of reviewed literature

The review of the literature proved instrumental in shaping and defining the research problem with reference to:

- Corporate governance

The Gompers et al (2003) research and that of Core et al (1999) provide the basis for a corporate governance index (CGI) to proxy for corporate governance.

- Shareholder value

A vast number of the quantitative studies reviewed, used TSR as a measure for company performance. In a South African context, given the highly rated JSE, ranked first in the world with respect to regulation of securities exchanges in the World Economic Forum's Global Competitiveness Survey for 2013-2014, TSR should be a suitable proxy for company performance and/or shareholder wealth.

- CEO compensation

In the reviewed international articles, a number of measures for CC includes long term incentives as a component of CEO compensation. These were calculated using various methods, mostly using the Black-Scholes method which is defined as a pricing model used to determine the fair price or

theoretical value for a call or a put option based on six variables such as volatility, type of option, underlying stock price, time, strike price, and risk-free rate (Economic Times 2014).

The JSE outline the complete disclosure requirements, when reporting on directors' remuneration in the listed companies' annual reports, as per clause and sub clauses 7.B.7. This includes share options or any other right given which has had the same or a similar effect in respect of providing a right to subscribe for shares ("share options"). The detail to be provided includes:

- The opening balance of share options, including the number of shares.
- Options at each different strike price.
- The number of share options awarded and their strike prices.
- The strike dates of differing lots of options awarded.
- The number of share options exercised and at what prices.
- The closing balance of share options, including the number of share.
- Options at each different strike price.
- The above may be presented in tabular form.

On perusing the annual reports of listed SA companies, it is noted that all companies, by and large, are adhering to the above reporting format. However, this clause does not enforce companies to report the actual cost of the share options, per director, as expensed on the income statements of the respective companies as per the IFRS2 guideline. This ambiguity has resulted in either, a number of SA listed companies not reporting the cost of options expensed per director in the remuneration section of their annual reports, alternatively, when reported, some companies comply in an inconsistent fashion.

- Statistical methods

The literature reviewed provide an immense amount of information on the key concepts of the topic and the methods deployed in deconstructing the concepts into measures to be utilised in the statistical analysis. It is observed that regression and correlation analysis were utilised in most of the reviewed quantitative studies.

Whilst concluding the literature review, it is important to note that there is a dearth of published literature by South African researchers on the topic. With a few exceptions, the initial articles

filtered did not conform to the intense analysis provided by the studies conducted by the global academics.

CHAPTER 3 – Research methods

3.1. Introduction

Chapters 1 and 2 provide the background and context in which the topic was explored. The introduction and literature review suggest that there is not an alignment of CEO compensation with shareholder returns.

The primary research questions to be addressed, for the period 2004 to 2013, are:

- Is CEO compensation aligned to shareholder returns?
- Does corporate governance play a role in improving the alignment of CEO compensation and shareholder returns?

The proposed *null* hypothesis (H_0) is that:
"Poor corporate governance prevails in South African listed companies resulting in CEO compensation not being aligned to shareholder wealth creation".

This chapter details the research methods employed to gather the information and the statistical techniques used to test the hypothesis.

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3.2. Research approach

A longitudinal, quantitative research approach has been adopted to conduct the study. This is consistent with Bryman, Bell, Hirschsohn, dos Santos, du Toit, Masenge, van Aardt and Wagner (2014:31) who submit that "a quantitative research approach tends to emphasise the collection and analysis of data and adopts a deductive approach to the relationship between theory and research, in which the emphasis is placed on the testing of theories".

3.3. Population

The study focuses on listed companies in South Africa, namely; those listed on the JSE. The JSE was formed in 1887 and is currently ranked the 19th largest stock exchange in the world by market capitalisation and the largest exchange on the African continent (JSE 2016). As at the end of

December 2013, the listed companies totalled 389 with a market capitalisation of more than R 10.6 trillion.

3.4. Sample

According to Wegner (2012), a sample is a subset of data values drawn from the population. The subset used for the study is a sample extracted from the top 100 companies on the JSE as at December 2013.

A schedule of the top 100 JSE listed companies with market capitalisation values as at December 2013, was obtained from the JSE's information centre and captured on a data control sheet to monitor the data collection process (see example Appendix 1). This was narrowed down to the final subset of 38 companies primarily due to the following data collection problems:

- 14 of the top 100 companies were listed post the base year of the study, namely, 2003.
- 45 companies were excluded due to the required information and data not being available from a number of their annual reports.
- 2 were excluded as they were dual listed, therefore the data from the annual reports of the JSE listed entity was used.
- African Bank (ABIL) was placed under curatorship and thus virtually no information was available.

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See Appendix 2 for a list of the excluded companies.

The final sample is made up of 38 companies with a market capitalisation of more than R 4.0 trillion as at the end of December 2013. The top 100 companies' market capitalisation equates to approximately R 9.5 trillion and the sample represents 42% of the market capitalisation of the top 100 JSE listed companies as at the end of 2013.

3.5. Data collection methods

Data was collected from the companies' annual reports and the I-Net Bridge database and is referred to as secondary data by Wegner (2012), who also describes one of the main advantages of secondary data as its ease of access.

A data collection spreadsheet was designed (see Appendix 3), for the purpose of capturing the data from the annual reports for CGI and CC and from the I-Net Bridge database in respect of share prices and dividends, the essential components required to calculate TSR. Formulae were inserted in the appropriate cells to calculate the required values for the concept measures, in order to test the relationship between the variables.

3.6. Concepts and variables

The concepts were previously identified and reduced, in Chapter 1 and 2, to variables that can be operationalised to provide values for statistical analysis. The composition and description of these variables are detailed hereafter.

3.6.1. Corporate Governance Index (CGI)

A mediating variable that reflects the strength of governance by means of an annual four component corporate governance index (CGI), comprising of board composition and ownership elements (see Appendix 3). The CGI was informed by the measurable elements in the King III report and institutional shareholder ownership as suggested by researchers. A collation of the data values for the corporate governance index is reflected on Appendix 4 and a summary of the annual values are reflected on the table below.

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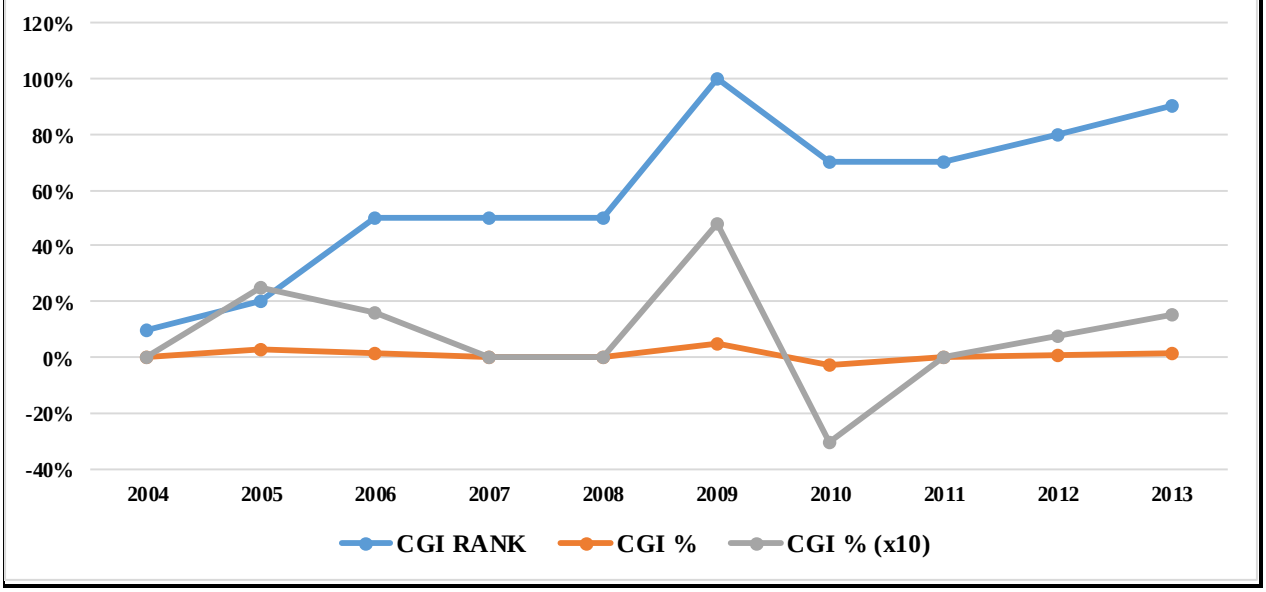
TABLE 3.6.1.

YEAR	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
CGI RANK	10%	20%	50%	50%	50%	100%	70%	70%	80%	90%
CGI %	0.00%	2.50%	1.63%	0.00%	0.00%	4.80%	-3.05%	0.00%	0.79%	1.56%
CGI % (x10)	0.00%	25.00%	16.26%	0.00%	0.00%	48.00%	-30.53%	0.00%	7.87%	15.63%

The annual CGI scores were ranked (see Appendix 3) and the period movement, the years 2004 to 2013, is reflected in Figure 1, below.

Figure 1. CGI Ranked and Annual Mean % Change with Mean % (x10)



(Note: CGI% (x10) is included to improve the graphical representation of the Mean %)

3.6.2. CEO Compensation (CC)

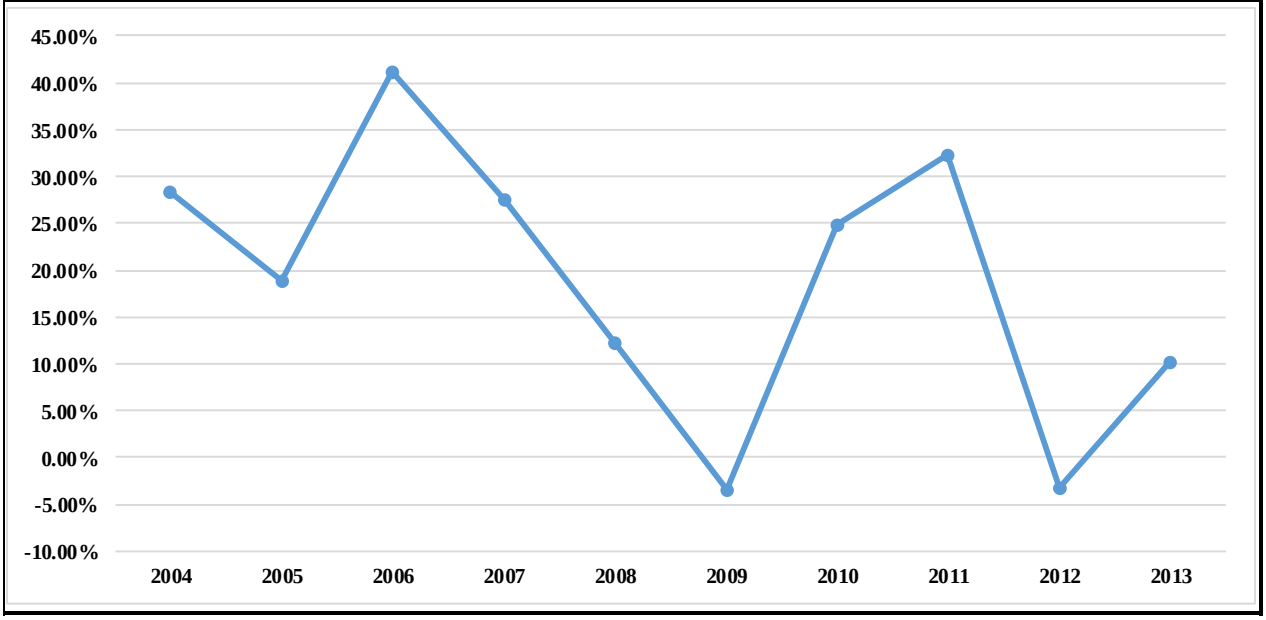
The dependent variable measured as an annual percentage increase (or decrease) in the total pay of the CEO. Long term incentives (share options) are excluded as a component of CEO compensation due to the lack of and inconsistent information provided by some companies in their annual reports. CC therefore comprises of, salary, the annual bonus and other fringe benefits. A summary of the companies with the data values are presented in Appendix 5. The annual values are reflected on the table below.

TABLE 3.6.2.

YEAR	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
% change	28.36%	18.88%	41.13%	27.59%	12.25%	-3.33%	24.85%	32.21%	-3.27%	10.15%

The following chart, Figure 2, graphically displays the percentage movement over the ten year period.

Figure 2. CEO Compensation (CC) 2004 to 2013



3.6.3. Total shareholder return (TSR)

TSR, an independent variable which is measured as an annual percentage increase (or decrease) is calculated using the following formula:

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$$TSR = \frac{(SP_1 - SP_0)}{SP_0} + D \times 100$$

Where:

SP_0: Equals the share price at the beginning of the period.

SP_1: Equals the share price at the end of the period.

D: Equals dividends paid during the period.

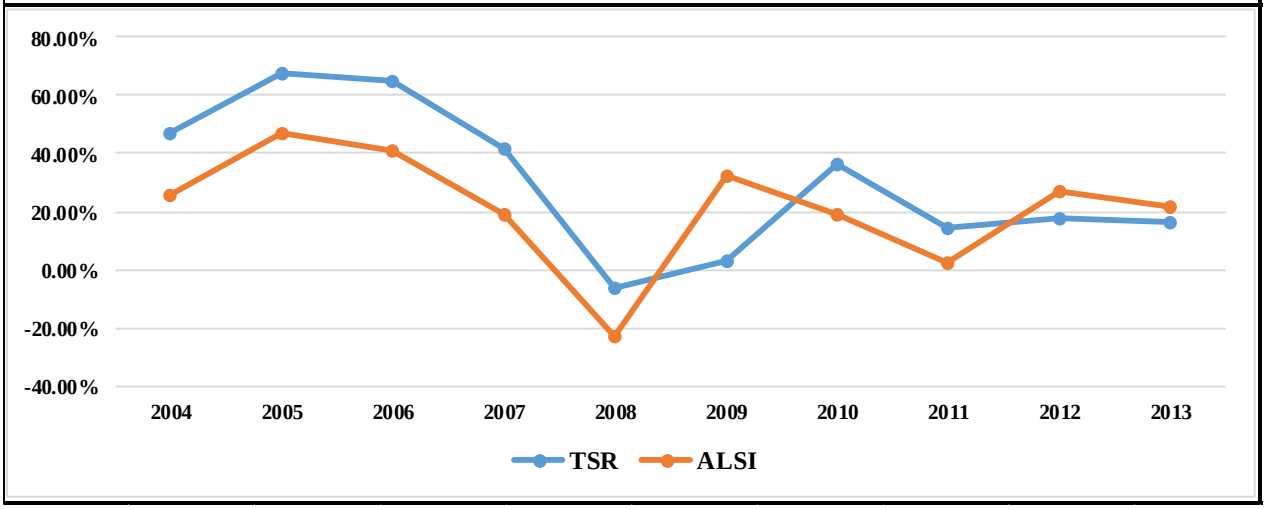
Actual shareholder wealth created is more accurately measured by TSR than any other accounting or non-accounting measure such as EVA. A collation of the companies and data values for total shareholder returns are presented in Appendix 6. A summary of the annual values and that of the applicable FTSE/JSE All Share Index (ALSI), namely, the ALSI J203, are reflected on the table below.

TABLE 3.6.3.

YEAR	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	TOTALS
TSR	46.98%	67.68%	64.73%	41.44%	-5.98%	3.28%	36.38%	14.54%	17.92%	16.50%	303.46%
ALSI	25.44%	47.25%	41.23%	19.19%	-23.23%	32.13%	18.98%	2.57%	26.68%	21.43%	211.68%

The annual values for the research period are graphically depicted in Figure 3, below.

Figure 3. TSR and ALSI Relationship



The above line chart reflects the TSR for the sample companies and the applicable FTSE/JSE All Share Index (ALSI), which includes dividends. It is interesting to note that the sample outperformed the ALSI, on average, by more than 9% per annum. The graphic displays the strong positive relationship between the sample companies and the ALSI. A regression and correlation analysis established that the 38 sample companies' TSR is significantly aligned with the JSE's ALSI. This suggests that the sample is a credible representation of the population.

The regression results are reflected in Appendix 7.

3.7. Data preparation

Wegner (2012:17) states that "data is the lifeblood of statistical analysis and it must therefore be relevant, clean and in the correct format".

To ensure the reliability of the data, corrections were made, where required, after the following checks:

- Abnormal annual value and percentage movements investigated to check for possible typographical and transposing errors and corrected if necessary.
- Comparing data collected to that of student assignments which reflected data collected for a similar sample period to that of this study.

- The appointment of independent specialists to sample check the data and values collected, formulae applied and statistical calculations.

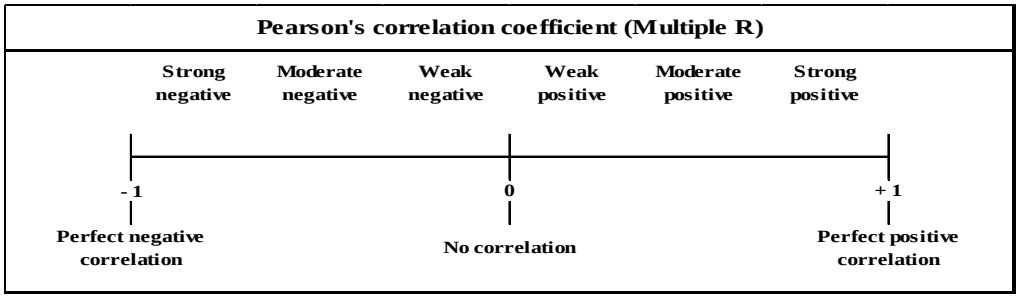
Additional data cleaning provided for the smoothing of CEO compensation when there were more than one CEO in a particular year. This involved averaging the new appointee's compensation for the period. An example being the case of a CEO being replaced midway through the financial year resulting in the salaries of two CEOs being reflected on the annual reports. The incumbent CEO's salary reflected in the annual report would be for part of the year and was thus smoothed and calculated to reflect the full earnings value for a year.

3.8. Statistical methods

Regression analysis and correlation analysis are described by Wegner (2012) as statistical tools employed to compute the relationship between variables and to measure the strength of the relationships. Microsoft's Excel Data Analysis function was used to construct a regression model and perform the correlation analysis.

Wegner (2012) describes the output results obtained as follows:

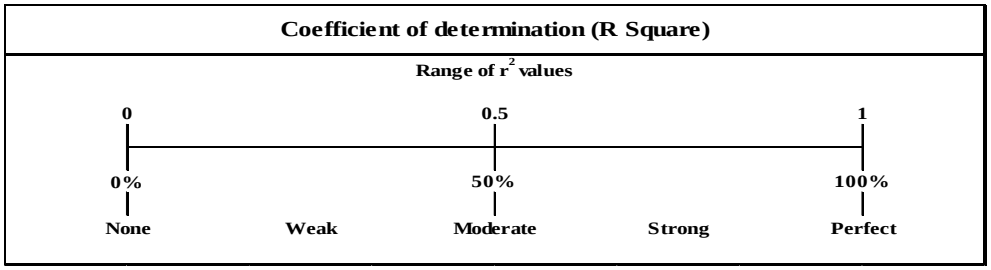
- The correlation coefficient, reflected as Multiple R in the Excel results worksheets, is also referred to as Pearson's correlation of coefficient and is represented by the symbol r when calculated from sample data. The graphic below will be used to interpret the strength of the relationship between the x and y variables.



(Source Wegner 2012)

- The coefficient of determination (r^2), reflected as R Square in the Excel results worksheets, measures the percentage of variation in the dependent variable y, that is explained by the

independent variable, x. The following graphic will be used to assist with the interpretation of the results.



(Source Wegner 2012)

- Hypothesis testing for significance, the *p*-value approach, was adopted to test for significance, namely to accept or reject the null hypothesis. Wegner (2012) describes this method as, "a *p*-value is a probability that indicates how likely it is to observe the sample statistic (or a more extreme value), if the null-hypothesised population parameter value is assumed to be true". The author further states that the decision rule (based on a test at the 5% level of significance) to be used to decide when the p-value is small enough to reject H_0 is as follows:
  - If the *p*-value is $\geq$ 5%, accept H_0.
  - If the p-value is < 5%, reject H_0.

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3.9. Summary

This chapter outlined the methods employed to arrive at the sample data and further substantiated the credibility of the sample data set when finding a significantly strong positive alignment between the sample and the JSE ALSI for the period 2004 to 2013.

The following chapter provides the detail of the statistical process and presents the results of the statistical analysis.

CHAPTER 4 – Statistical analysis and results

4.1. Introduction

The statistical analysis seeks to find the significance of the relationship that exists between shareholder returns (TSR) and CEO compensation (CC) over a ten year period, beginning in January 2004 and ending December 2013. The results of the regression and correlation analysis will validate whether the null hypothesis should be supported or rejected. This first analysis is referred to as “year for year”.

The second test is to establish the significance of the afore-mentioned relationships, retrospectively applying (lagging) CC data by a year, namely; year 2005 CC data compared to year 2004 TSR data. This results in one less observation, namely; 9 observations, as TSR data for 2012 would be compared to CC data for 2013. This second analysis is referred to as “lagged”.

A further deliberation is to investigate whether corporate governance, as measured by the CGI, has any influence on the strength of the relationship between TSR and CC on a year for year and lagged basis and entails:

- Creating a top (strong CGI) and bottom (weak CGI) grouping of the sample by ranking the companies based on CGI strength to statistically analyse the respective groupings TSR and CC relationships.
- Period analysis of the relationship between the TSR and CC variables for split periods, namely, the first 5 and last 5 years, for both the total sample and the top and bottom CGI ranked companies.

4.2. TSR and CC: Year for year basis - Regression and correlation analysis

A simple regression model was used for each of the analysis below. The discussion that follows, identifies the dependent and independent variables and provides a commentary of the results.

4.2.1. Total sample

The outputs presented in Table 4.2.1 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.622 suggests a moderately positive correlation, r^2 equals 38.7% indicating a moderate to weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.055 is borderline and marginally > than 0.05 suggesting, tentatively, that the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.2.2. Top CGI 19 companies

The outputs presented in Table 4.2.2 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.645 suggests a moderate to strong positive correlation, r^2 equals 41.6% indicating a weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.044 is < than 0.05 suggesting the *null* hypothesis should be rejected, based on a test at the 5% level of significance.

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4.2.3. Bottom CGI 19 companies

The outputs presented in Table 4.2.3 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.473 suggests a weak positive correlation, r^2 equals 22.3% indicating a weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.168 is > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.2.4. Split periods: Period 1 (2004 to 2008) – Total sample

The outputs presented in Table 4.2.4 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.646 suggests a moderate to strong positive correlation, r^2 equals 41.7% indicating a very strong explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.239 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.2.5. Split periods: Period 1 (2004 to 2008) – Top CGI 19 Companies

The outputs presented in Table 4.2.5 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.649 suggests a moderate to strong positive correlation, r^2 equals 42.1% indicating a very strong explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.236 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.2.6. Split periods: Period 1 (2004 to 2008) – Bottom CGI 19 Companies

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The outputs presented in Table 4.2.6 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.424 suggests a moderate positive correlation, r^2 equals 18.0% indicating a weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.476 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.2.7. Split periods: Period 2 (2009 to 2013) – Total sample

The outputs presented in Table 4.2.7 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.514 suggests a weak positive correlation, with an r^2 of 26.4% indicating a weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.376 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.2.8. Split periods: Period 2 (2009 to 2013) – Top CGI 19 Companies

The outputs presented in Table 4.2.8 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.584 suggests a moderate positive correlation, r^2 of 34.1% indicating a weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.301 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.2.9. Split periods: Period 2 (2009 to 2013) – Bottom CGI 19 Companies

The outputs presented in Table 4.2.9 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.407 suggests a moderate positive correlation, r^2 squared equals 16.5% indicating a weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.497 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

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4.3. TSR and CC: Lagged basis - Regression and correlation analysis

4.3.1. Total sample

The outputs presented in Table 4.3.1 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.705 suggests a strong positive correlation, r^2 equals 49.7% indicating a moderate explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.034 is < than 0.05 suggesting the *null* hypothesis should be rejected, based on a test at the 5% level of significance.

4.3.2. Top CGI 19 Companies

The outputs presented in Table 4.3.2 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.345 suggests a weak to moderate positive correlation, r^2 equals 11.9% indicating a weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.363 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.3.3. Bottom CGI 19 Companies

The outputs presented in Table 4.3.3 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.765 suggests a strong positive correlation, r^2 equals 58.6% indicating a moderate explanation of the percentage variation in CC that can be attributed TSR and the *p*-value of 0.016 is < than 0.05 suggesting the *null* hypothesis should be rejected, based on a test at the 5% level of significance.

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4.3.4. Split periods: Period 1 (2004 to 2008) – Total sample

The outputs presented in Table 4.3.4 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.933 suggests a very strong positive correlation, r^2 equals 87.1% indicating a very strong explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.021 is < than 0.05 suggesting the *null* hypothesis should be rejected, based on a test at the 5% level of significance.

4.3.5. Split periods: Period 1 (2004 to 2008) – Top CGI 19 Companies

The outputs presented in Table 4.3.5 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.50 suggests a weak positive correlation, r^2 equals 25.0% indicating a weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.391 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.3.6. Split periods: Period 1 (2004 to 2008) – Bottom CGI 19 Companies

The outputs presented in Table 4.3.6 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.924 suggests a strong, near perfect correlation, r^2 equals 85.3% indicating a strong to perfect explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.025 is < than 0.05 suggesting the *null* hypothesis should be rejected, based on a test at the 5% level of significance.

4.3.7. Split periods: Period 2 (2008 to 2012) – Total sample

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The outputs presented in Table 4.3.7 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.585 suggests a weak positive correlation, r^2 equals 34.2% indicating a weak explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.301 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.3.8. Split periods: Period 2 (2008 to 2012) – Top CGI 19 Companies

The outputs presented in Table 4.3.8 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.235 suggests a weak positive correlation, r^2 equals 5.5% indicating a weak to no explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.703 is considerably > than 0.05 suggesting the *null* hypothesis fails to be rejected, based on a test at the 5% level of significance.

4.3.9. Split periods: Period 2 (2008 to 2012) – Bottom CGI 19 Companies

The outputs presented in Table 4.3.9 results from using CC (y variable) as the dependent variable and TSR (x variable) as the independent variable.

The Multiple R of 0.829 suggests a very strong positive correlation, r^2 equals 68.7% indicating a moderate explanation of the percentage variation in CC that can be attributed to TSR and the *p*-value of 0.083 is > than 0.05 suggesting the *null* hypothesis fails to be rejected based on a test at the 5% level of significance.

4.4. Summary of results

4.4.1. Year for year basis

CEO compensation (CC) applied on a "year for year" basis for the total sample results in a weak TSR and CC alignment and produces similar results for the bottom 19 CGI ranked companies. However, when applied to the top 19 CGI ranked companies, a moderate to positive significant TSR and CC relationship is observed.

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The "year for year" basis period analysis, 2004 to 2013, for the total sample presents a moderate TSR and CC relationship in the first 5 years (2004 to 2008) and a similar, though weaker, relationship in the last 5 years (2009 to 2013).

For the period analysis, 2004 to 2013, when applied to the higher CGI ranked companies, similar results are found, namely, a stronger relationship is observed in the first period than that in the second period. The bottom CGI ranked companies' results reflect moderate positive relationships for both periods.

4.4.2. Lagged basis

CEO compensation (CC) applied retrospectively (lagged), results in a strong significant TSR and CC relationship. This applies to the total sample and the bottom 19 CGI ranked companies. However, the top 19 companies reflect a weak positive alignment.

The “lagged” basis period analysis for the total sample presents a very strong, significant relationship between TSR and CC in the first 5 years (2004 to 2008) and a weaker relationship in the last 5 years (2008 to 2012).

The top ranked CGI companies’ results are similar, but reflect a weak relationship in the first period and an even weaker association in the last 5 years.

The results of the bottom CGI ranked companies present a near perfect relationship in the first period and a slightly weaker, yet very strong relationship in the second period.

4.4.3. Corporate governance

The strength of corporate governance in respect of the total sample, for both the “year to year” and “lagged” basis, suggest an overall weakening over the latter part of the period (2008 to 2012/3).

The top 19 CGI ranked companies findings emulate the total sample’s results, namely, a weakening of corporate governance for the last period.

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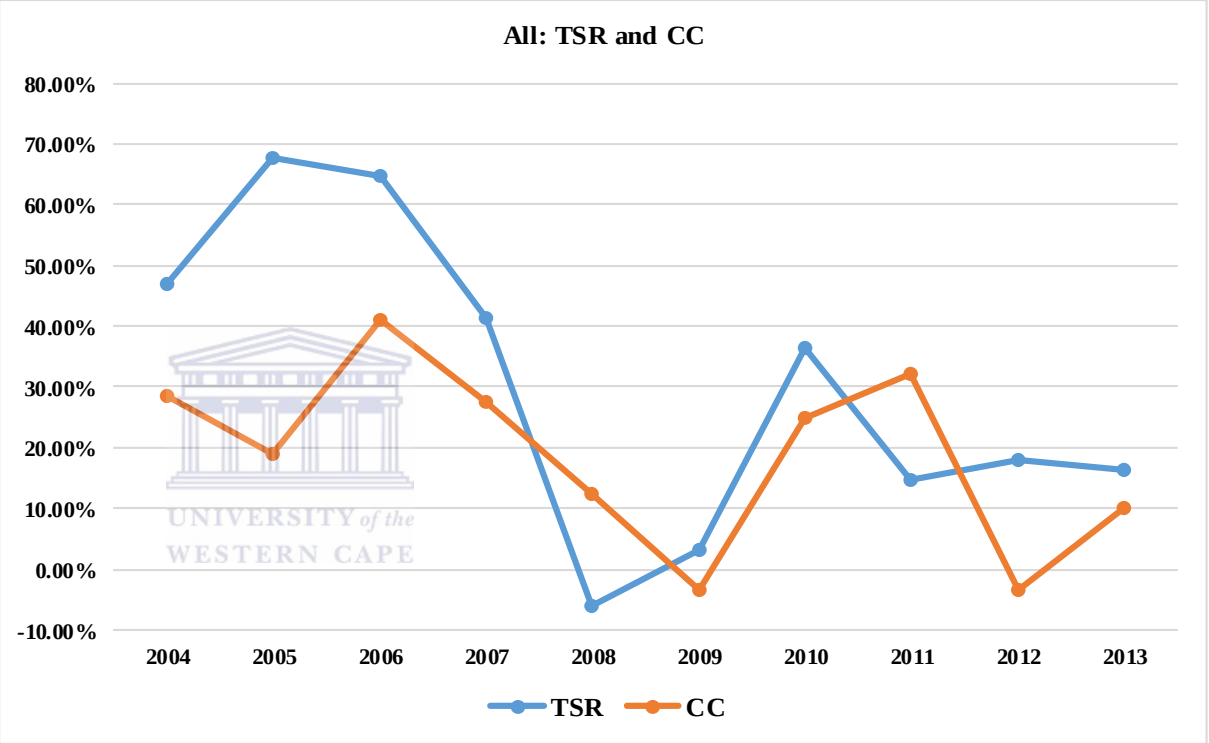
For the bottom CGI ranked companies, strong and consistent corporate governance is observed for the whole period, given the findings of the TSR and CC relationships in both the year for year and lagged basis analysis.

Table 4.2.1. All: Results Statistical Analysis - Simple Linear Regression TSR (x variable) CC (y variable)

	TSR	CC
2004	46.98%	28.36%
2005	67.68%	18.88%
2006	64.73%	41.13%
2007	41.44%	27.59%
2008	-5.98%	12.25%
2009	3.28%	-3.33%
2010	36.38%	24.85%
2011	14.54%	32.21%
2012	17.92%	-3.27%
2013	16.50%	10.15%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.62242444	**Moderate positive**
R Square	0.387412184	**Weak**
Adj. R Square	0.310838706	
Standard Error	0.123082476	
Observations	10	

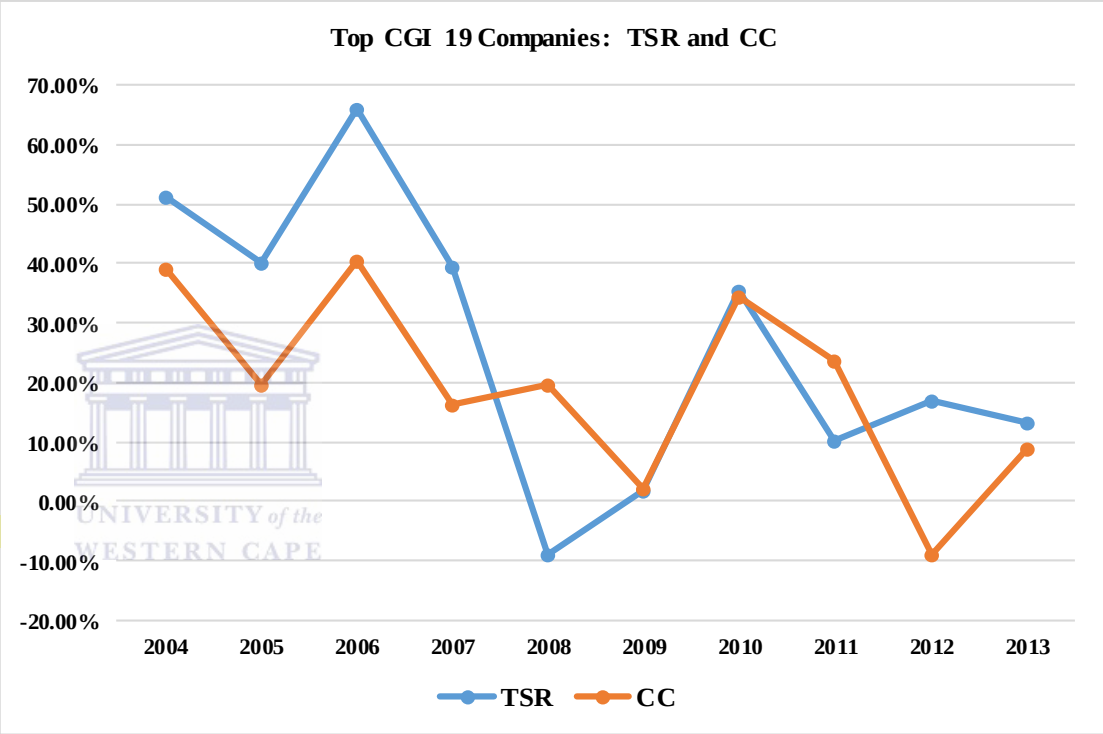
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.076645622	0.076645622	5.05935212	0.054626913	**p-value > 0.05 therefore ??? H_0 (borderline)**
Residual	8	0.121194366	0.015149296			
Total	9	0.197839988				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.07717478	0.06308408	1.223363805	0.256001454	-0.068297369	0.222646929	-0.068297369	0.222646929
TSR	0.367986861	0.163600588	2.249300362	0.054626913	-0.009276771	0.745250494	-0.009276771	0.745250494

Table 4.2.2. Top CGI 19 Companies. Results Statistical Analysis - Simple Linear Regression TSR (x variable) CC (y variable)

	TSR	CC
2004	51.36%	39.25%
2005	40.20%	19.49%
2006	65.90%	40.60%
2007	39.38%	16.36%
2008	-8.78%	19.51%
2009	1.78%	2.10%
2010	35.49%	34.56%
2011	10.33%	23.77%
2012	16.95%	-8.87%
2013	13.14%	8.73%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.64510723	**Moderate to strong positive**
R Square	0.416163338	**Weak to moderate**
Adj. R Square	0.343183755	
Standard Error	0.129931769	
Observations	10	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.096270482	0.096270482	5.702462547	0.043994109	**p-value < 0.05 therefore reject H_0**
Residual	8	0.135058117	0.016882265			
Total	9	0.231328599				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.078796366	0.0638516	1.234054685	0.25220335	-0.068445687	0.226038419	-0.068445687	0.226038419
TSR	0.439169106	0.183907974	2.387982945	0.043994109	0.015076557	0.863261655	0.015076557	0.863261655

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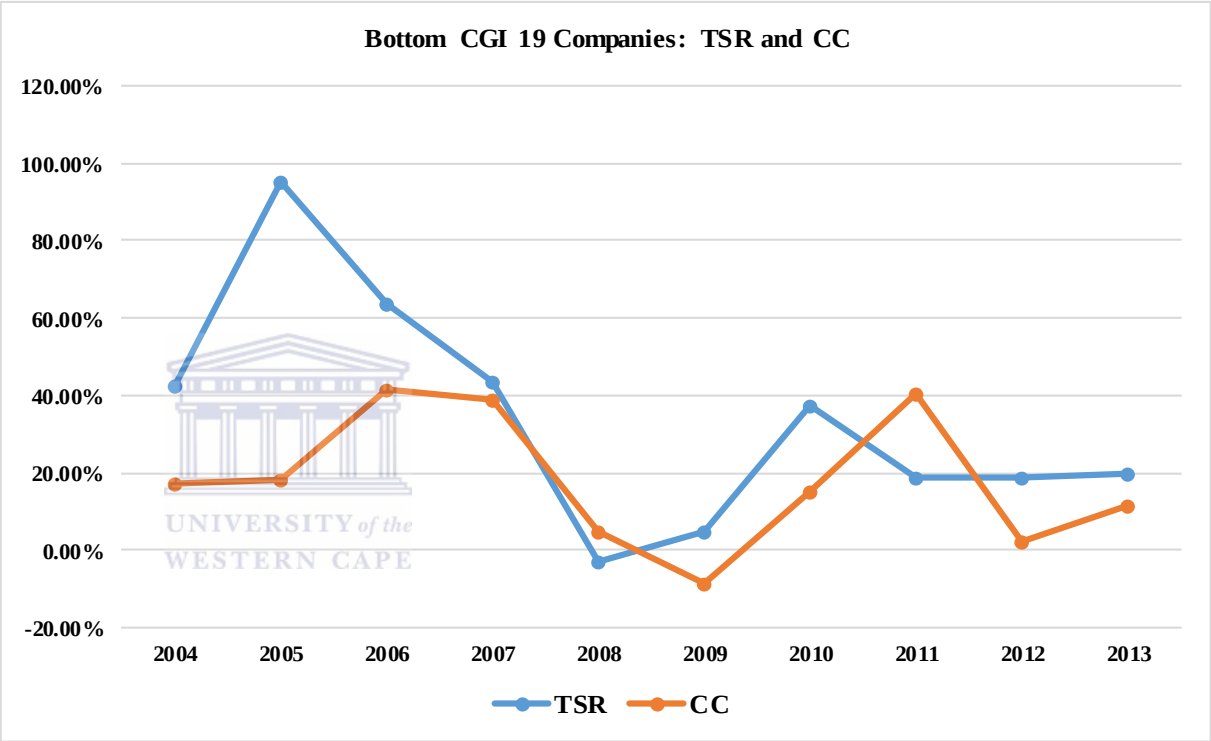
Table 4.2.3. Bottom CGI 19 companies. Results Statistical Analysis - Simple Linear Regression TSR (x variable) CC (y variable)

	TSR	CC
2004	42.59%	17.47%
2005	95.15%	18.28%
2006	63.56%	41.67%
2007	43.50%	38.81%
2008	-3.18%	5.00%
2009	4.77%	-8.77%
2010	37.27%	15.15%
2011	18.75%	40.66%
2012	18.89%	2.33%
2013	19.86%	11.57%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.472753415	**Weak positive**
R Square	0.223495791	**Weak**
Adj. R Square	0.126432765	
Standard Error	0.161500536	
Observations	10	

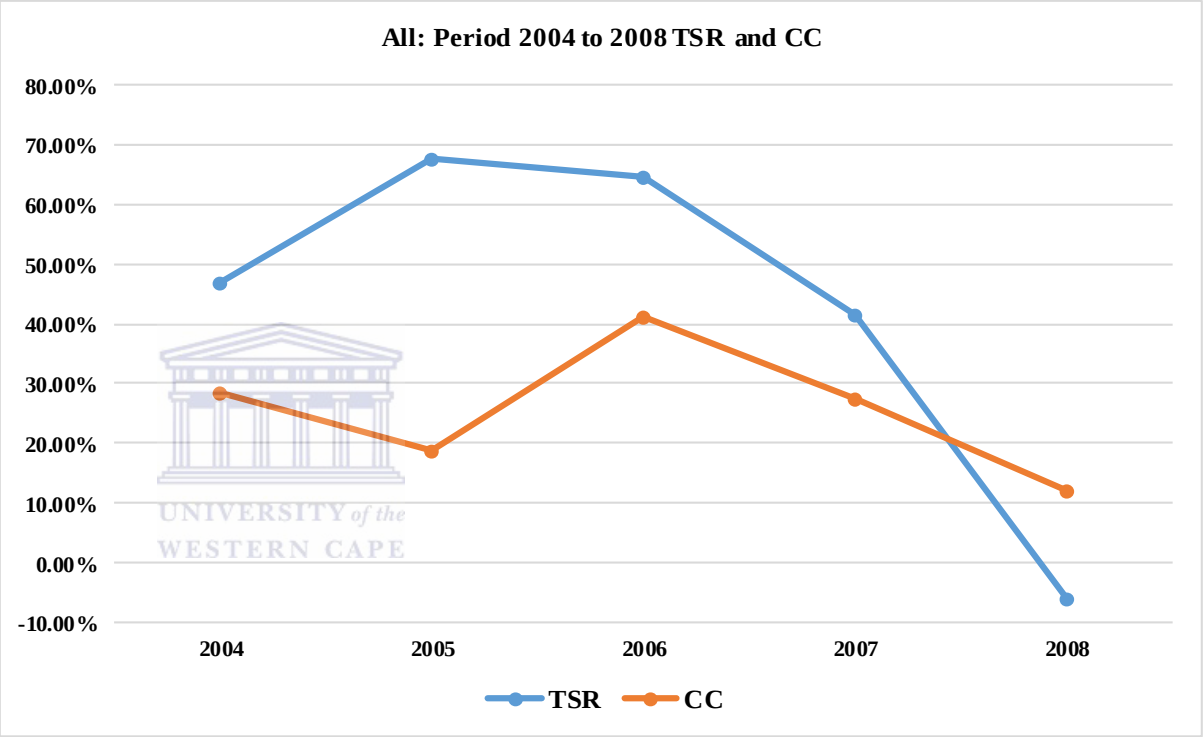
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.060056975	0.060056975	2.302584208	0.167635279	**p-value > 0.05 therefore accept H_0**
Residual	8	0.208659385	0.026082423			
Total	9	0.26871636				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.086809017	0.080981421	1.071962132	0.31500671	-0.099934475	0.273552508	-0.099934475	0.273552508
TSR	0.279541468	0.184220722	1.517426838	0.167635279	-0.145272279	0.704355215	-0.145272279	0.704355215

Table 4.2.4. All: Period 2004 to 2008. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC (y variable)

	TSR	CC
2004	46.98%	28.36%
2005	67.68%	18.88%
2006	64.73%	41.13%
2007	41.44%	27.59%
2008	-5.98%	12.25%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.645770852	**Moderate positive**
R Square	0.417019993	**Weak**
Adj. R Square	0.222693324	
Standard Error	0.096180777	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.019851852	0.019851852	2.145974072	0.239176549	**p-value > 0.05 therefore accept H_0**
Residual	3	0.027752226	0.009250742			
Total	4	0.047604078				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.154082275	0.082052103	1.877858937	0.157027242	-0.107044137	0.415208687	-0.107044137	0.415208687
TSR	0.238218735	0.162616152	1.464914356	0.239176549	-0.279298436	0.755735906	-0.279298436	0.755735906

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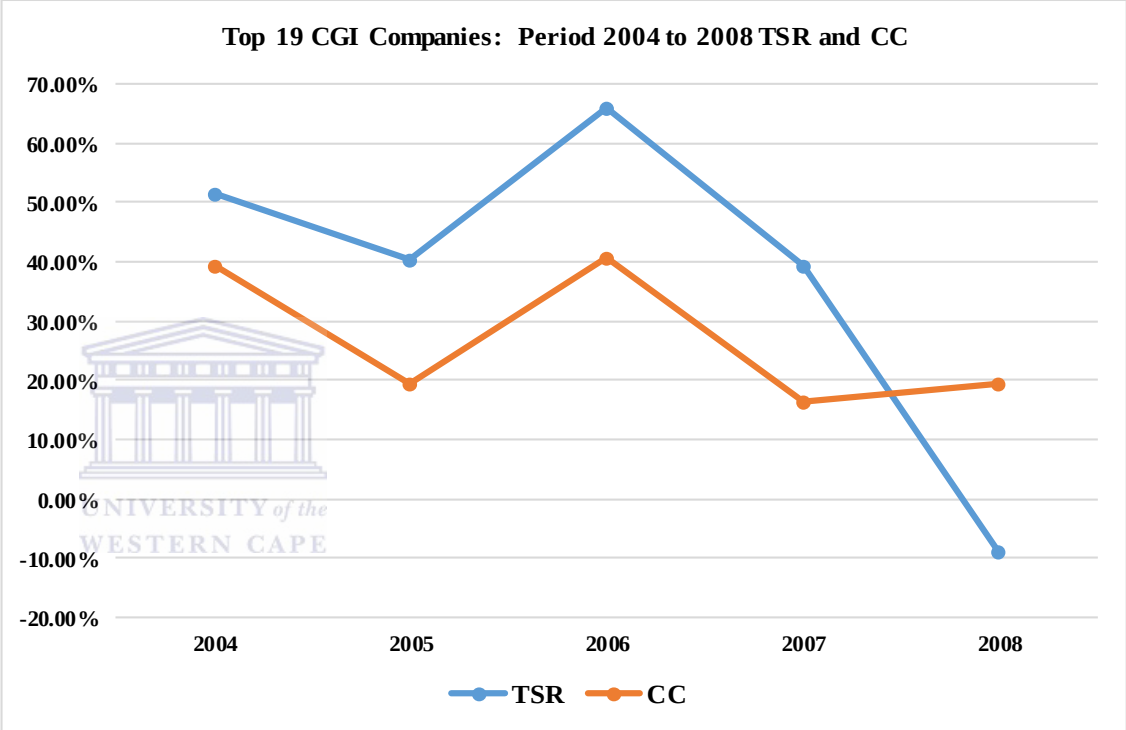
Table 4.2.5. Top 19 CGI Companies: Period 2004 to 2008. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC (y variable)

	TSR	CC
2004	51.36%	39.25%
2005	40.20%	19.49%
2006	65.90%	40.60%
2007	39.38%	16.36%
2008	-8.78%	19.51%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.648707258	**Moderate to strong positive**
R Square	0.420821107	**Weak to moderate**
Adj. R Square	0.227761475	
Standard Error	0.104027476	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.0235886	0.0235886	2.179746766	0.236326553	**p-value > 0.05 therefore accept H_0**
Residual	3	0.032465147	0.010821716			
Total	4	0.056053747				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.167509943	0.083804139	1.998826601	0.139484506	-0.099192231	0.434212116	-0.099192231	0.434212116
TSR	0.273604254	0.185318947	1.476396548	0.236326553	-0.316163345	0.863371853	-0.316163345	0.863371853

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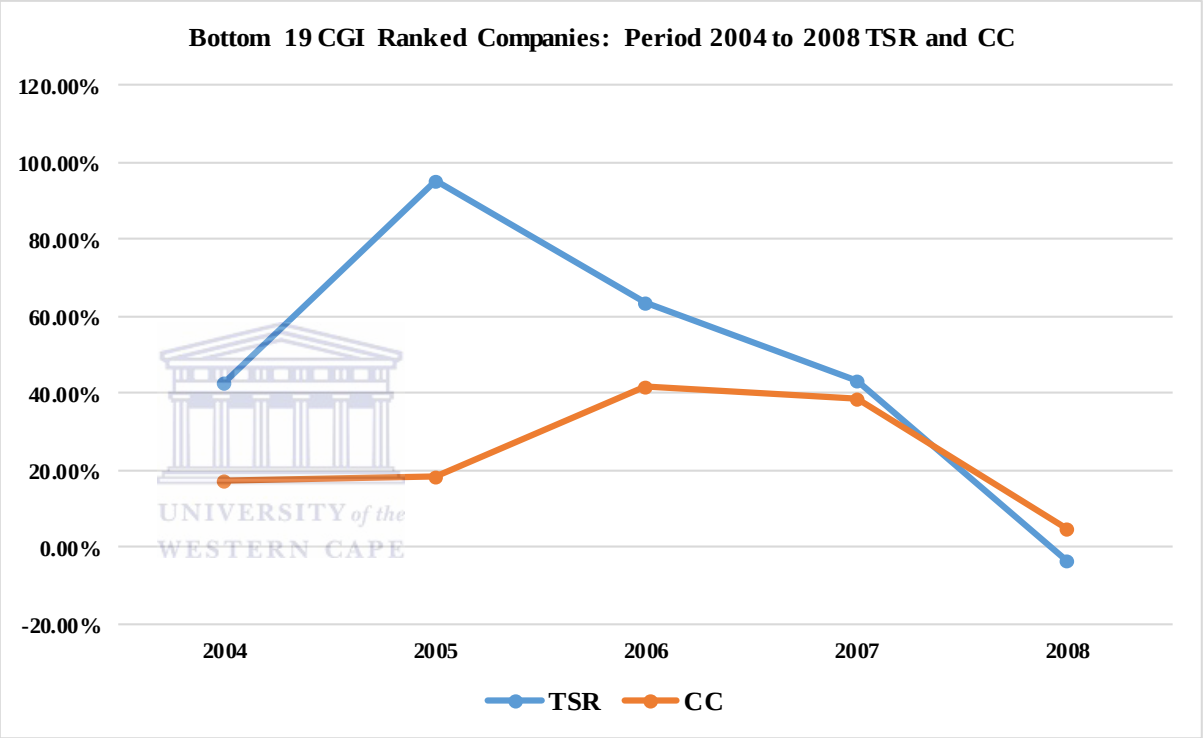
Table 4.2.6. Bottom 19 CGI Companies: Period 2004 to 2008. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC (y variable)

	TSR	CC
2004	42.59%	17.47%
2005	95.15%	18.28%
2006	63.56%	41.67%
2007	43.50%	38.81%
2008	-3.18%	5.00%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.424439385	**Moderate positive**
R Square	0.180148792	**Weak**
Adj. R Square	-0.093134944	
Standard Error	0.162630675	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.017435022	0.017435022	0.659200559	0.476282209	**p-value > 0.05 therefore accept H_0**
Residual	3	0.079346209	0.026448736			
Total	4	0.096781231				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.153406417	0.131608306	1.165628682	0.328013473	-0.265429952	0.572242785	-0.265429952	0.572242785
TSR	0.184287859	0.226980183	0.81191167	0.476282209	-0.538064385	0.906640103	-0.538064385	0.906640103

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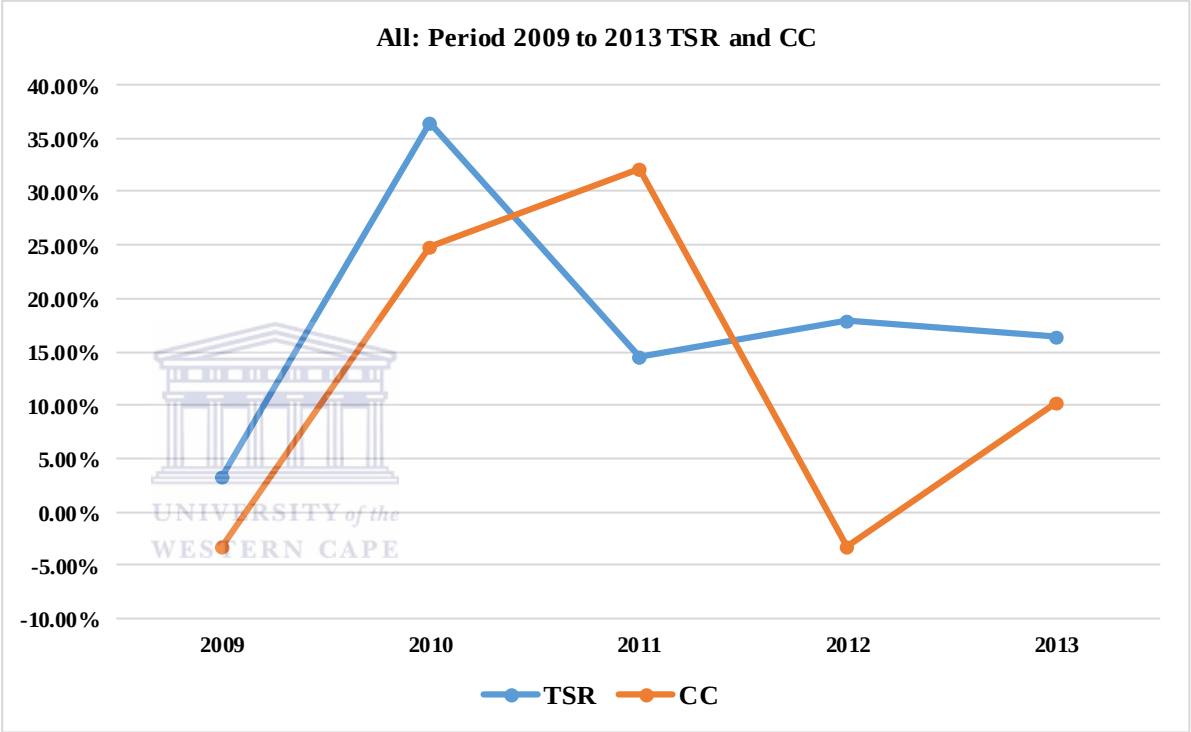
Table 4.2.7. All: Period 2009 to 2013. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC (y variable)

	TSR	CC
2009	3.28%	-3.33%
2010	36.38%	24.85%
2011	14.54%	32.21%
2012	17.92%	-3.27%
2013	16.50%	10.15%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.513944004	**Moderate positive**
R Square	0.264138439	**Weak**
Adj. R Square	0.018851252	
Standard Error	0.160131305	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.027612723	0.027612723	1.0768538	0.375699111	**p-value > 0.05 therefore accept H_0**
Residual	3	0.076926104	0.025642035			
Total	4	0.104538827				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.002282128	0.138916591	-0.016428044	0.987924383	-0.444376721	0.439812465	-0.444376721	0.439812465
TSR	0.69700319	0.671670684	1.037715665	0.375699111	-1.440552697	2.834559078	-1.440552697	2.834559078

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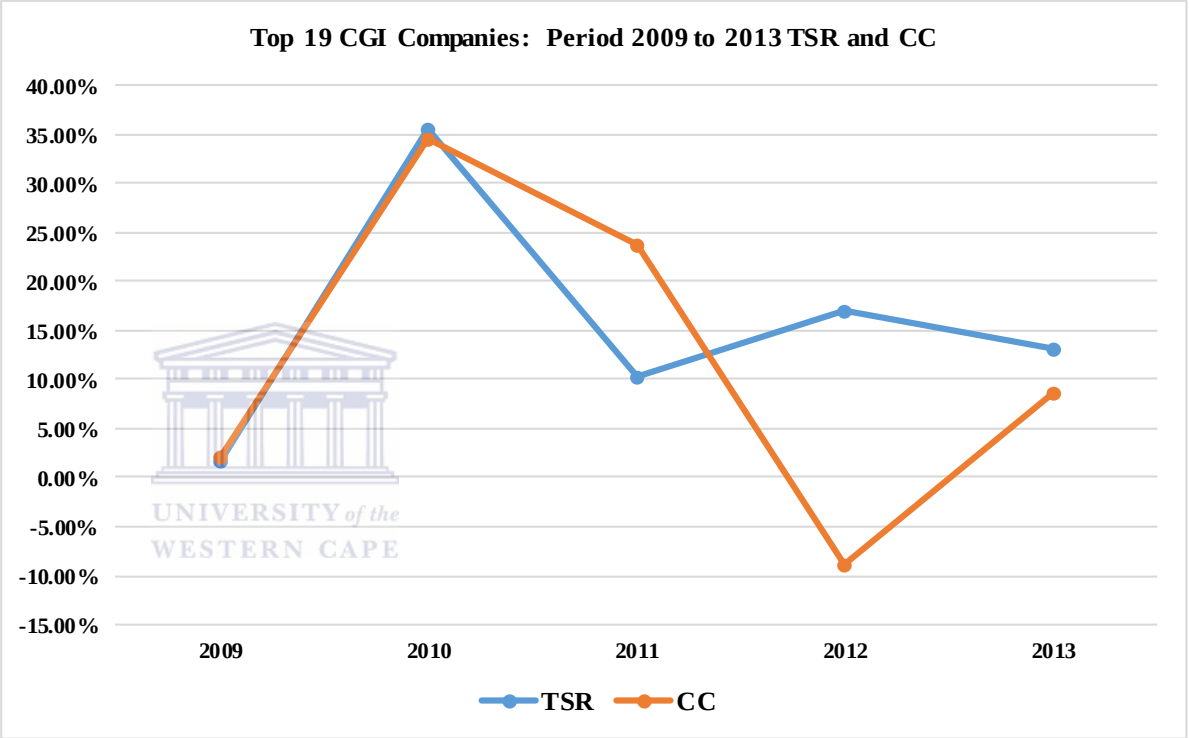
Table 4.2.8. Top 19 CGI Companies: Period 2009 to 2013. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC (y variable)

	TSR	CC
2009	1.78%	2.10%
2010	35.49%	34.56%
2011	10.33%	23.77%
2012	16.95%	-8.87%
2013	13.14%	8.73%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.58433293	**Moderate positive**
R Square	0.341444974	**Weak**
Adj. R Square	0.121926632	
Standard Error	0.161731232	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.040685317	0.040685317	1.55542799	0.300830946	**p-value > 0.05 therefore accept H_0**
Residual	3	0.078470975	0.026156992			
Total	4	0.119156291				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.005057321	0.124025794	-0.040776363	0.970036154	-0.39976275	0.389648109	-0.39976275	0.389648109
TSR	0.808671954	0.648406599	1.247167988	0.300830946	-1.254847233	2.87219114	-1.254847233	2.87219114

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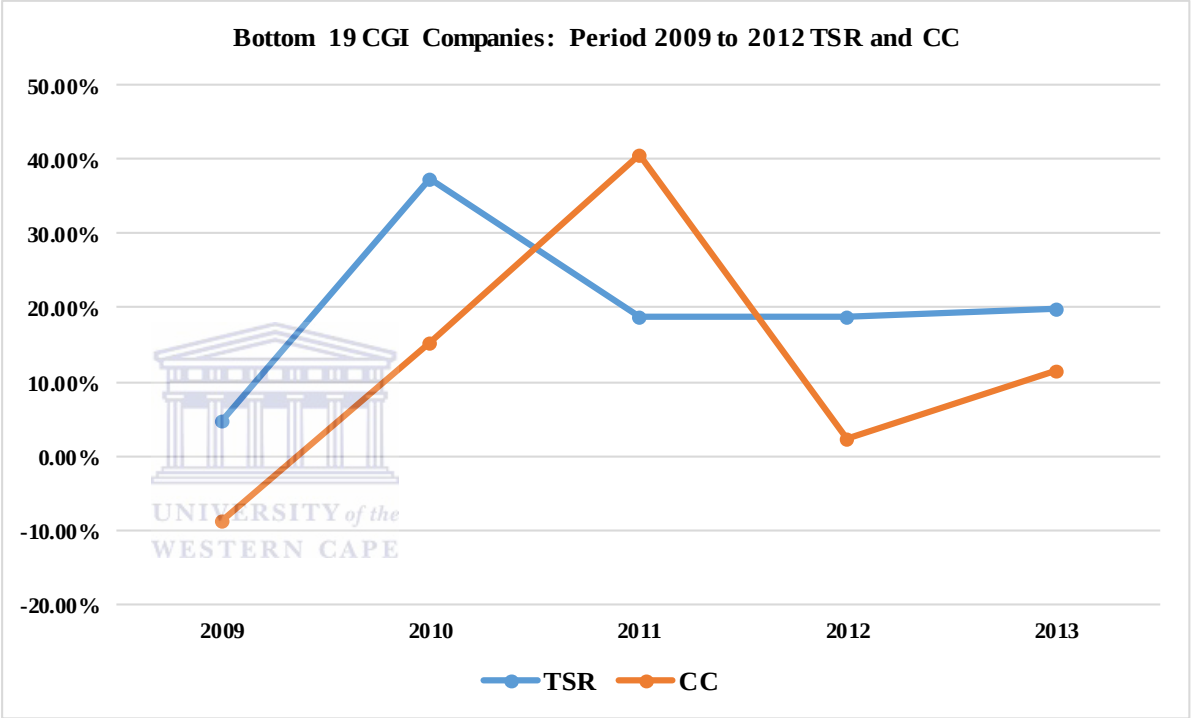
Table 4.2.9. Bottom 19 CGI Ranked Companies: Period 2009 to 2012. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC (y variable)

	TSR	CC
2009	4.77%	-8.77%
2010	37.27%	15.15%
2011	18.75%	40.66%
2012	18.89%	2.33%
2013	19.86%	11.57%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.406731065	**Moderate positive**
R Square	0.165430159	**Weak**
Adj. R Square	-0.112759788	
Standard Error	0.194215803	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.022430677	0.022430677	0.594666201	0.496789477	**p-value > 0.05 therefore accept H_0**
Residual	3	0.113159334	0.037719778			
Total	4	0.135590011				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.007264493	0.188663356	-0.038505058	0.971704054	-0.607675493	0.593146506	-0.607675493	0.593146506
TSR	0.648806944	0.84135419	0.771146031	0.496789477	-2.028757589	3.326371477	-2.028757589	3.326371477

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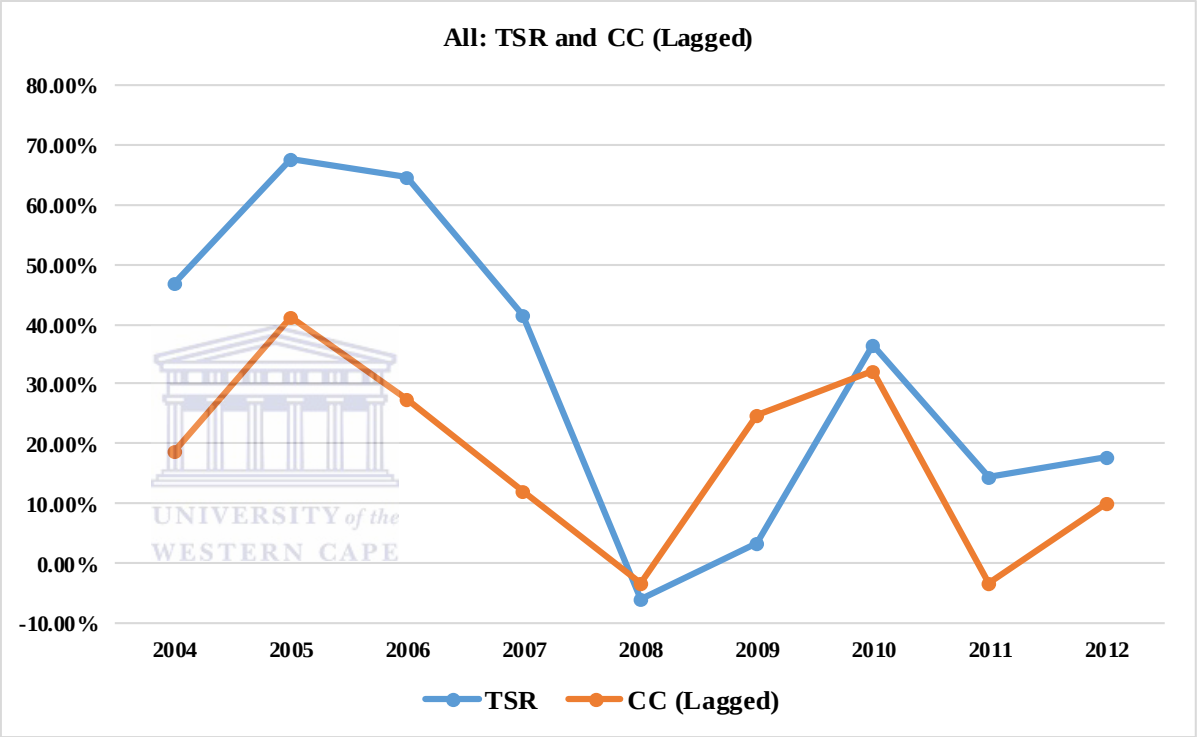
Table 4.3.1. All: Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC Lagged (y variable)

	TSR	CC (Lagged)
2004	46.98%	18.88%
2005	67.68%	41.13%
2006	64.73%	27.59%
2007	41.44%	12.25%
2008	-5.98%	-3.33%
2009	3.28%	24.85%
2010	36.38%	32.21%
2011	14.54%	-3.27%
2012	17.92%	10.15%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.705017944	**Strong positive**
R Square	0.497050301	**Moderate**
Adj. R Square	0.425200344	
Standard Error	0.11617977	
Observations	9	

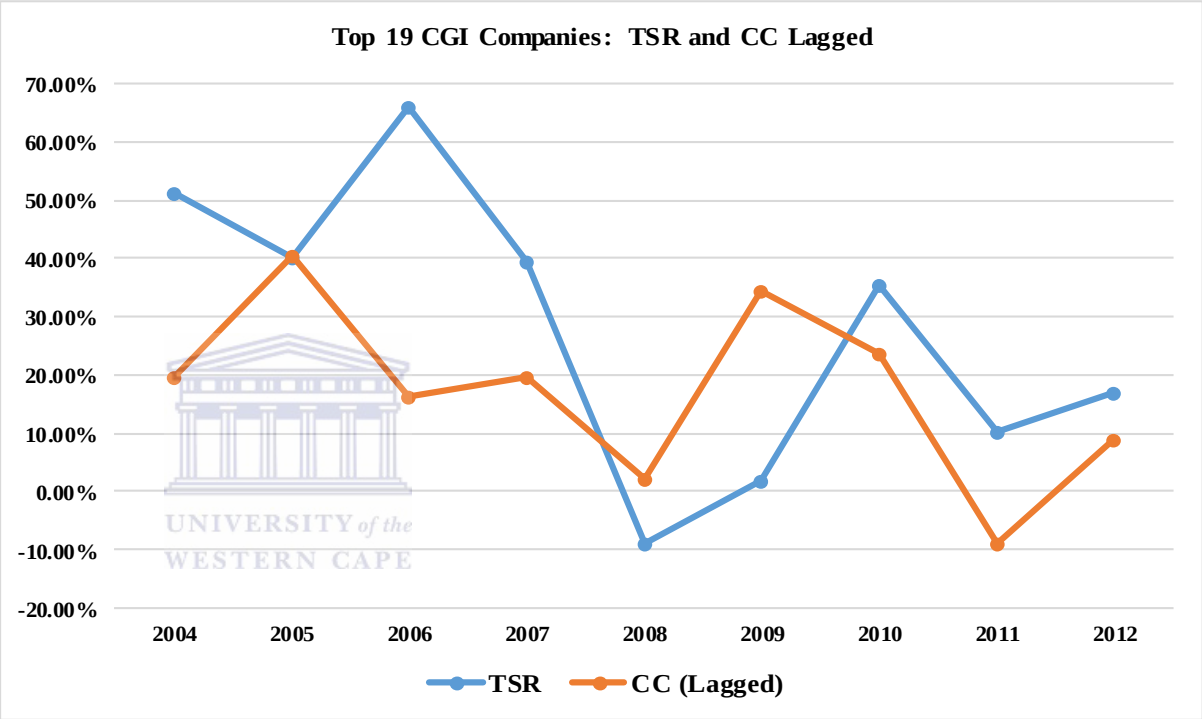
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.093375911	0.093375911	6.917892821	0.033903312	**p-value < 0.05 therefore reject H_0**
Residual	7	0.094484172	0.013497739			
Total	8	0.187860083				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.046301052	0.06339442	0.730364778	0.488884225	-0.103602932	0.196205036	-0.103602932	0.196205036
TSR	0.414034648	0.157416326	2.630188742	0.033903312	0.041804186	0.78626511	0.041804186	0.78626511

Table 4.3.2. Top 19 CGI Companies. Results Statistical Analysis - Simple Linear Regression TSR (x variable) CC Lagged (y variable)

	TSR	CC (Lagged)
2004	51.36%	19.49%
2005	40.20%	40.60%
2006	65.90%	16.36%
2007	39.38%	19.51%
2008	-8.78%	2.10%
2009	1.78%	34.56%
2010	35.49%	23.77%
2011	10.33%	-8.87%
2012	16.95%	8.73%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.345309553	**Weak positive**
R Square	0.119238687	**Weak to none**
Adj. R Square	-0.006584357	
Standard Error	0.153887167	
Observations	9	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.022442013	0.022442013	0.947669703	0.362743992	**p-value > 0.05 therefore accept H_0**
Residual	7	0.16576882	0.02368126			
Total	8	0.188210833				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.112871721	0.08078132	1.397250278	0.205031123	-0.078145746	0.303889189	-0.078145746	0.303889189
TSR	0.216432414	0.222327818	0.973483283	0.362743992	-0.309289335	0.742154163	-0.309289335	0.742154163

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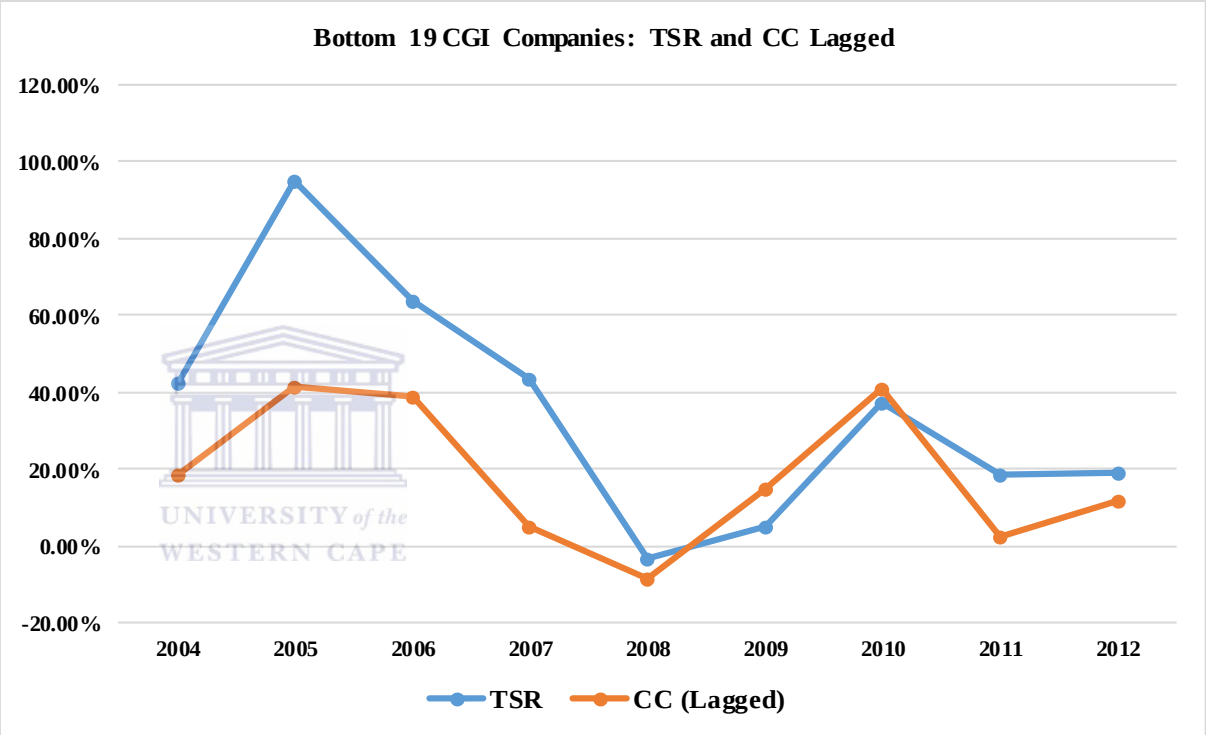
Table 4.3.3. Bottom 19 CGI Companies. Results Statistical Analysis - Simple Linear Regression TSR (x variable) CC Lagged (y variable)

	TSR	CC (Lagged)
2004	42.59%	18.28%
2005	95.15%	41.67%
2006	63.56%	38.81%
2007	43.50%	5.00%
2008	-3.18%	-8.77%
2009	4.77%	15.15%
2010	37.27%	40.66%
2011	18.75%	2.33%
2012	18.89%	11.57%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.765202918	**Strong positive**
R Square	0.585535505	**Moderate**
Adj. R Square	0.526326291	
Standard Error	0.126122308	
Observations	9	

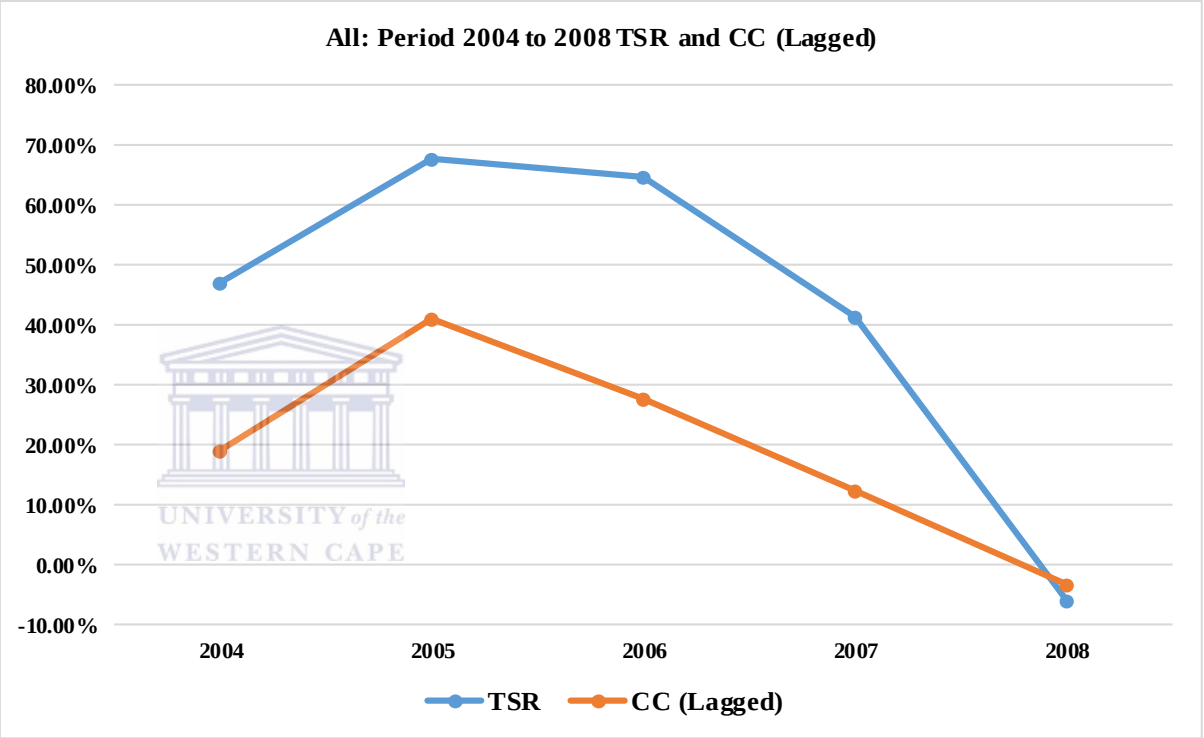
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.157306895	0.157306895	9.88926334	0.016271566	**p-value < 0.05 therefore reject H_0**
Residual	7	0.111347855	0.015906836			
Total	8	0.26865475				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.019066322	0.06697026	0.284698342	0.78411368	-0.139293179	0.177425823	-0.139293179	0.177425823
TSR	0.45921426	0.146027078	3.144719914	0.016271566	0.11391509	0.80451343	0.11391509	0.80451343

Table 4.3.4. All: Period 2004 to 2008. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC Lagged (y variable)

	TSR	CC (Lagged)
2004	46.98%	18.88%
2005	67.68%	41.13%
2006	64.73%	27.59%
2007	41.44%	12.25%
2008	-5.98%	-3.33%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.93315136	**Very strong positive**
R Square	0.870771461	**Very strong**
Adj. R Square	0.827695282	
Standard Error	0.069065493	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.09642491	0.09642491	20.21468638	0.020538529	**p-value < 0.05 therefore reject H_0**
Residual	3	0.014310127	0.004770042			
Total	4	0.110735037				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.0325354	0.058919974	-0.552196434	0.619288504	-0.220045055	0.154974255	-0.220045055	0.154974255
TSR	0.525012951	0.116771407	4.496074552	0.020538529	0.153394218	0.896631683	0.153394218	0.896631683

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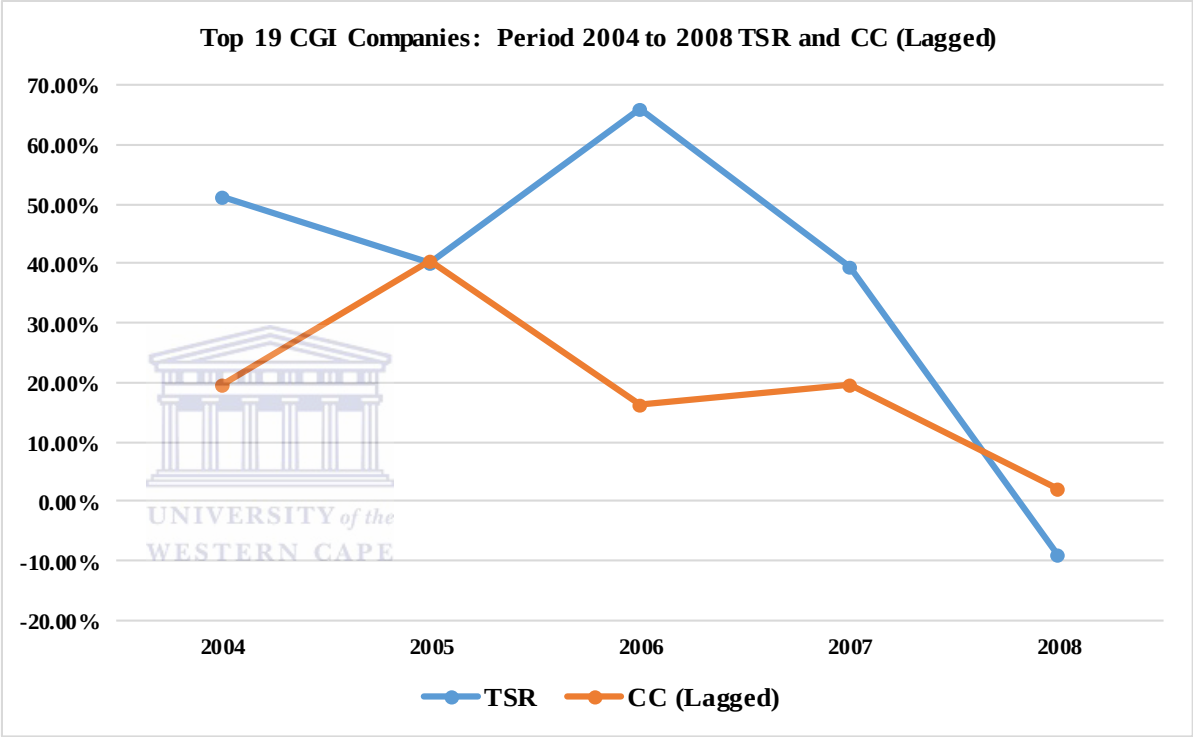
Table 4.3.5. Top 19 CGI Companies: Period 2004 to 2008. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC Lagged (y variable)

	TSR	CC (Lagged)
2004	51.36%	19.49%
2005	40.20%	40.60%
2006	65.90%	16.36%
2007	39.38%	19.51%
2008	-8.78%	2.10%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.500169315	**Weak positive**
R Square	0.250169344	**Weak**
Adj. R Square	0.000225792	
Standard Error	0.137593836	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.018949166	0.018949166	1.000903372	0.390815533	**p-value > 0.05 therefore accept H_0**
Residual	3	0.056796191	0.018932064			
Total	4	0.075745357				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.103891211	0.110845071	0.937265049	0.417764694	-0.248867277	0.456649699	-0.248867277	0.456649699
TSR	0.245226172	0.245115482	1.000451584	0.390815533	-0.534840687	1.02529303	-0.534840687	1.02529303

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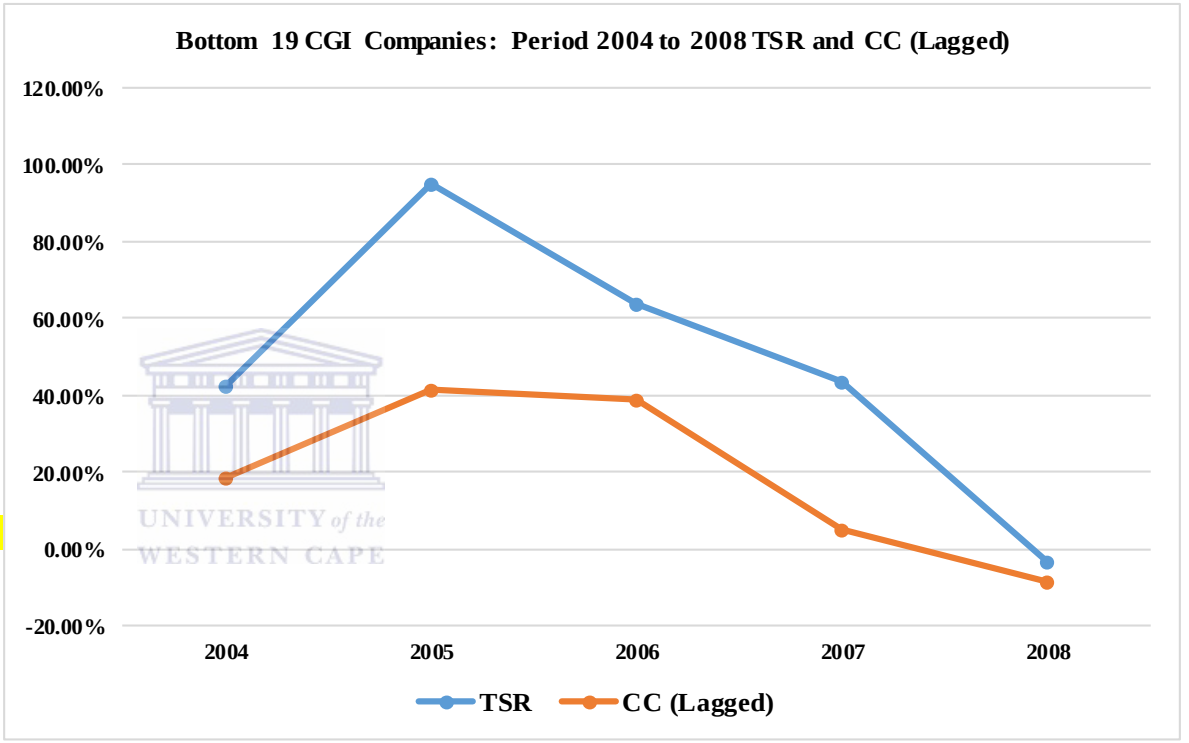
Table 4.3.6. Bottom 19 CGI Companies: Period 2004 to 2008. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC Lagged (y variable)

	TSR	CC (Lagged)
2004	42.59%	18.28%
2005	95.15%	41.67%
2006	63.56%	38.81%
2007	43.50%	5.00%
2008	-3.18%	-8.77%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.923738774	**Near perfect positive**
R Square	0.853293322	**Strong to perfect**
Adj. R Square	0.804391096	
Standard Error	0.095732039	
Observations	5	

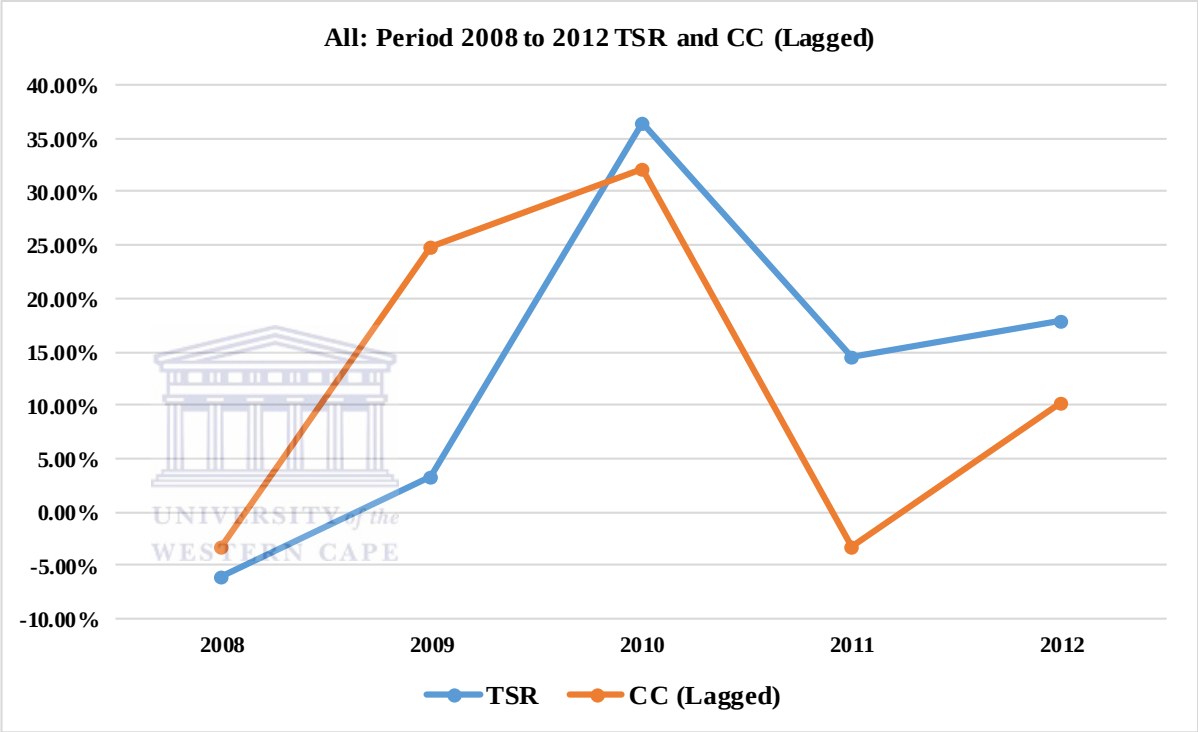
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.159913209	0.159913209	17.44896689	0.024989536	**p-value < 0.05 therefore reject H_0**
Residual	3	0.02749387	0.009164623			
Total	4	0.187407079				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.079722974	0.077470819	-1.029071013	0.379155315	-0.326269695	0.166823747	-0.326269695	0.166823747
TSR	0.558120079	0.133611176	4.177196056	0.024989536	0.132909684	0.983330473	0.132909684	0.983330473

Table 4.3.7. All: Period 2008 to 2012. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC Lagged (y variable)

	TSR	CC (Lagged)
2008	-5.98%	-3.33%
2009	3.28%	24.85%
2010	36.38%	32.21%
2011	14.54%	-3.27%
2012	17.92%	10.15%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.584520385	**Weak positive**
R Square	0.34166408	**Weak**
Adj. R Square	0.122218774	
Standard Error	0.151461398	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.035717162	0.035717162	1.556944123	0.300637275	**p-value > 0.05 therefore accept H_0**
Residual	3	0.068821665	0.022940555			
Total	4	0.104538827				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.043261602	0.09216221	0.46940717	0.67078848	-0.250039683	0.336562887	-0.250039683	0.336562887
TSR	0.589568908	0.472495916	1.24777567	0.300637275	-0.914123974	2.093261791	-0.914123974	2.093261791

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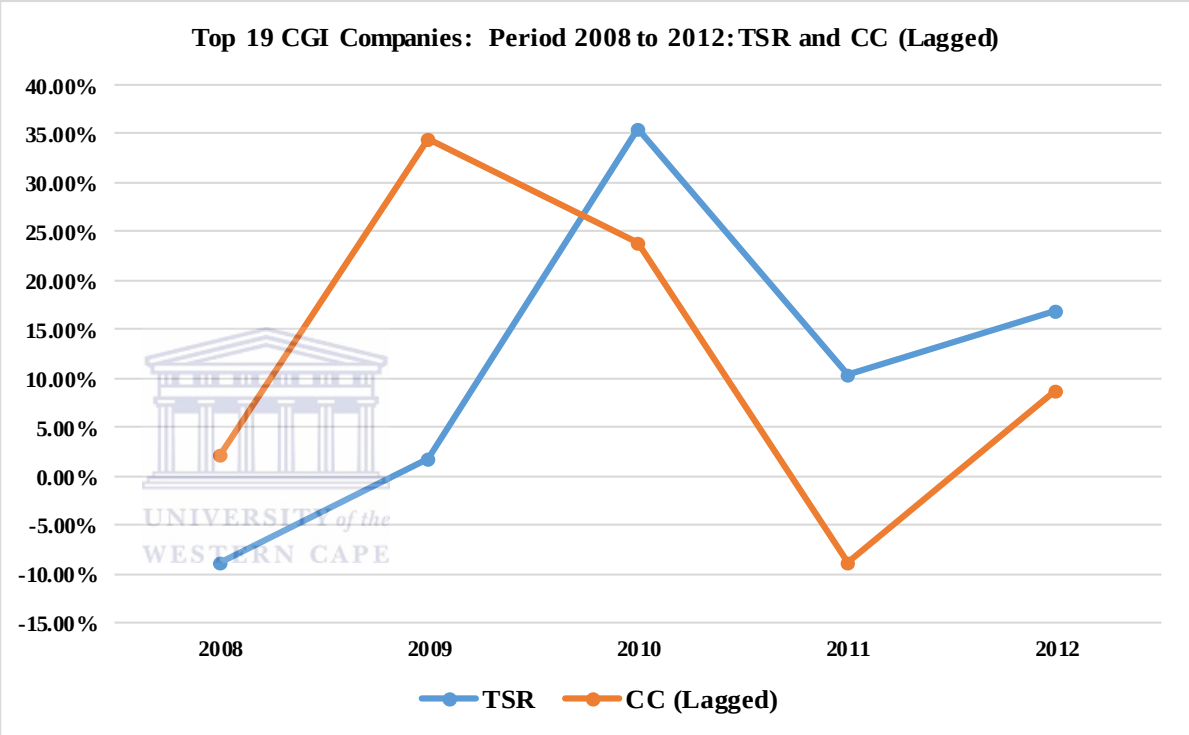
Table 4.3.8. Top 19 CGI Companies: Period 2008 to 2012. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC Lagged (y variable)

	TSR	CC (Lagged)
2008	-8.78%	2.10%
2009	1.78%	34.56%
2010	35.49%	23.77%
2011	10.33%	-8.87%
2012	16.95%	8.73%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.235084648	**Weak positive**
R Square	0.055264792	**Near none**
Adj. R Square	-0.259646944	
Standard Error	0.193710388	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.006585148	0.006585148	0.175492957	0.703461215	**p-value > 0.05 therefore accept H_0**
Residual	3	0.112571144	0.037523715			
Total	4	0.119156291				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.093446091	0.108191928	0.863706679	0.451276909	-0.250868911	0.437761093	-0.250868911	0.437761093
TSR	0.243399418	0.581018136	0.418918795	0.703461215	-1.605659603	2.092458439	-1.605659603	2.092458439

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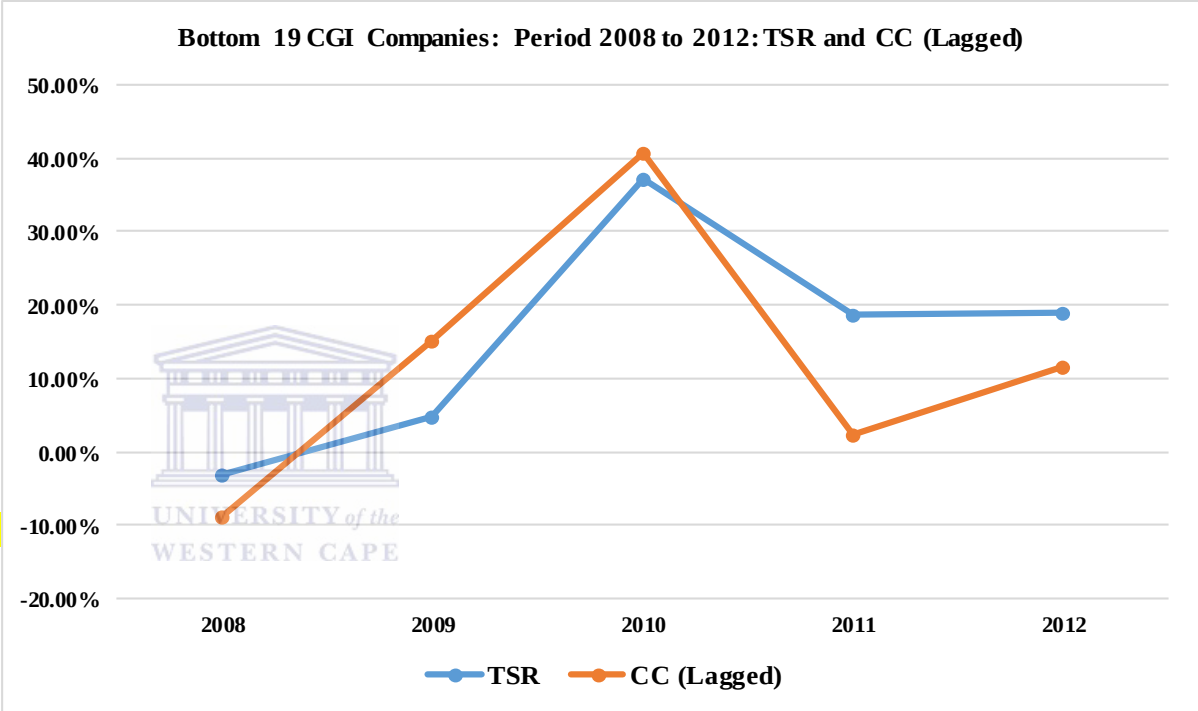
Table 4.3.9. Bottom 19 CGI Companies: Period 2008 to 2012. Results Statistical Analysis - Simple Linear Regression TSR (x variable) and CC Lagged (y variable)

	TSR	CC (Lagged)
2008	-3.18%	-8.77%
2009	4.77%	15.15%
2010	37.27%	40.66%
2011	18.75%	2.33%
2012	18.89%	11.57%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.828637633	**Very strong positive**
R Square	0.686640327	**Moderate**
Adjusted R Square	0.582187103	
Standard Error	0.119007621	
Observations	5	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.09310157	0.09310157	6.573663306	0.082930893	**p-value > 0.05 therefore accept H_0**
Residual	3	0.042488442	0.014162814			
Total	4	0.135590011				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.028794321	0.079287548	-0.363163222	0.740563931	-0.281122685	0.223534042	-0.281122685	0.223534042
TSR	0.984947747	0.384157629	2.56391562	0.082930893	-0.237613282	2.207508775	-0.237613282	2.207508775

CHAPTER 5 – Discussion

5.1. Introduction

Chapter 1 outlined the initial purpose of the research, which was to:

- Examine the factors that determine and/or shape the relationship between the Chief Executive Officer's (CEO's) compensation and the wealth created for shareholders.
- Establish the corporate governance elements, systems and processes that assist in monitoring the CEO's remuneration and performance contract.
- Measure the effectiveness of South African listed companies' adherence to corporate governance measures in addressing the agency problem.

This research aimed to establish whether there was an alignment between the CEO compensation and the shareholder value relationship and additionally, whether corporate governance interventions influenced this relationship.

The resulting *null* hypothesis (H_0) stated that:

H_0: Poor corporate governance prevails in South African listed companies resulting in CEO compensation not being aligned to shareholder wealth creation.

The review of the literature, Chapter 2, provided the understanding which aided with the research methods described in Chapter 3 and the statistical analysis detailed in Chapter 4.

The purpose of the analysis was to measure the correlation and find the significance of the relationships that exist between:

- The annual percentage increase in CEO compensation (CC).
- The annual percentage value created for shareholders by using total shareholder returns (TSR) as a proxy.
- The annual percentage change of corporate governance control measures, by using a four component corporate governance index (CGI). This was then ranked per company CGI scores, which then provided two distinct CGI strength groups, namely, the top and bottom CGI ranked companies.

5.2. Summary of findings

5.2.1. Total sample - CC and TSR relationship

The results for the sample reveals a strong positive and significant relationship when CC is applied retrospectively (lagged) for the period 2004 to 2012. The period analysis, with CC lagged, reflects a very strong positive and significant relationship in the first 5 years (2004 to 2008) and a markedly weak positive and insignificant relationship in the last period (2008 to 2012).

The findings confirm a strong and significant alignment between CC and TSR, with a weakening of corporate governance observed in the latter period.

5.2.2. Top CGI ranked companies - CC and TSR relationship

The top CGI ranked companies results, applied on a year for year basis, display a moderate to strong positive and significant relationship. However, for the first period analysis (2004 to 2008), although a moderate to strong positive relationship is found, it is observed as being insignificant. The latter period, 2009 to 2013, displays an even weaker and more insignificant association. When CC is lagged, the top CGI ranked companies results are weak and insignificant.

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The full period, year to year basis results, suggest CC is aligned with TSR and that the higher corporate governance ranked companies are conceivably designing CEO compensation packages that aligns the executive's interest with that of the shareholders on a year for year basis and are not rewarding (or penalising) CEO's retrospectively.

For the seemingly top CGI ranked companies, surprisingly, the period analysis results reflect consistent, weak observations for both periods

5.2.3. Bottom CGI ranked companies - CC and TSR relationship

The bottom CGI ranked companies' results mirror those of the total sample when lagged, displaying a strong and significant relationship. The period analysis reveal a near perfect positive and very significant association in the first period (2004 to 2008) and less strong yet still significant relationship in the period 2008 to 2012.

These findings suggest CEO compensation is aligned to total shareholder returns and that companies with supposedly weaker corporate governance structures have designed CEO compensation packages that rewards (or penalises) the CEO for shareholder value created the previous year.

Further, the purportedly bottom CGI ranked companies display the more consistent alignment between CC and TSR over both the total period and for the first and second period analysis.

5.2.4. Corporate governance effects

The previous summary of the results (point 5.2 above), finds a stronger association for the lower CGI ranked companies between CC and TSR which suggest that the governance components of the index, namely, board chairperson independence, non-executive director majority and independence and strong institutional shareholding did not play a prominent role in influencing the CEO compensation and shareholder wealth creation relationship.

On the contrary, it appears that companies with higher corporate governance ratings have less of an alignment between the CC and TSR relationship. This suggests that the governance measures advocated to alleviate the principal-agent problem are futile.

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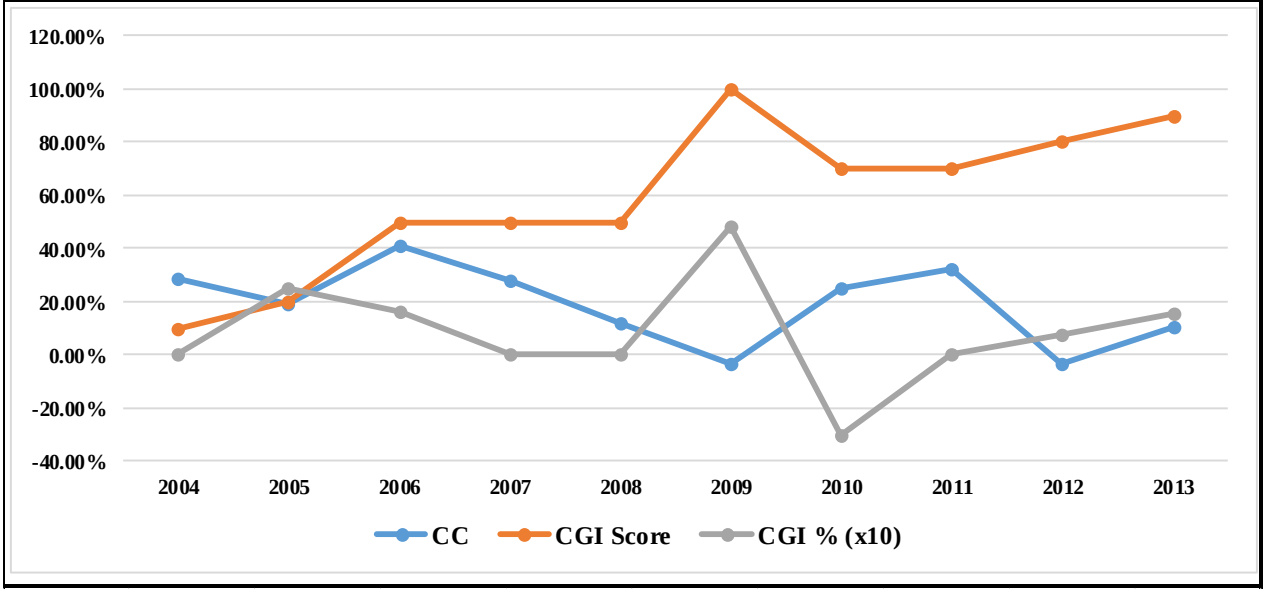
In order to obtain a better understanding of the results, the CGI measures for the period of the study were tabulated (see Table 5.2.4; below).

TABLE 5.2.4.

YEAR	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
CC	28.36%	18.88%	41.13%	27.59%	12.25%	-3.33%	24.85%	32.21%	-3.27%	10.15%
CGI Score	10%	20%	50%	50%	50%	100%	70%	70%	80%	90%
CGI % (x10)	0.00%	25.00%	16.26%	0.00%	0.00%	48.00%	-30.53%	0.00%	7.87%	15.63%

The values, which include CC for the period, are depicted in Figure 4, below.

Figure 4. CC, CGI ranked scores and CGI% change (x10)



(Note: Mean % change is multiplied by 10 for an improved graphical presentation)

For the period 2004 to 2013, conflicting results for corporate governance strength are observed on the line chart. There is a suggestion of a strengthening of governance, if annual CGI indicators are scored and ranked, but it appears that corporate governance remains virtually static if the annual mean percentage change is applied.

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An explanation for the weakening of the relationship in the second period could be due to the basic salary component of CEO compensation not necessarily decreasing in times of economic turmoil, for which the year 2008 is an example. The CC results on the above chart, reflect a reduction in CEO compensation from 2006 to 2009, which suggests a decrease in annual bonuses with the basic salary possibly decreasing or remaining fixed.

5.3. Comparison to similar studies

5.3.1. Studies in support of the governance, CEO and shareholder relationships

The earlier Baysinger and Butler (1985:120) study on US companies' report that more independent boards realise measurable performance dividends for the period 1970 to 1980. This is echoed in the Core et al (1999:403) research which finds a decrease in CEO compensation (CC) in boards with more independent directors (non-executive directors). The authors also report CC decreasing when

there is an institutional shareholder and note that CC increases if the CEO is also the chairman of the board.

Cornett, Marcus, and Tehranian (2008:372) questions whether the impact of governance structures and incentive-based compensation on firm performance measures up when performance is adjusted for the effects of earnings management and finds that CC is lower when stronger institutional ownership and more independent directors are observed. However, the authors also find that firms' earnings increase with more independent directors. The examination by Hartzell and Starks (2003:2372) affirms that stronger institutional ownership positively influences CC which they imply mitigates the agency problem.

The Gompers et al (2003:144) analysis finds stronger correlation between corporate governance and TSR in the 1990's for US firms. A test on companies using the corporate governance index (CGI) created by Gompers et al (2003), Varshney et al (2012:2) describe finding a positive relationship between their CGI and firm performance when EVA is used as a proxy for the firm's performance. Research by Larcker et al (2007:963) is less convincing and asserts that the CGI only has some ability to explain future operating performance and excess TSR. An article by Abowd (1990:68-S), suggest that pay for performance systems based on after gross economic return and TSR may be effective.

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South African research reporting on CC and company performance relationship, include a study by De Wet (2012:76) which reveal a significant relationship between CC and the company performance measures, ROA and ROE with even stronger relationships observed if EVA and MVA is used as a measure for company performance. The Scholtz and Smit (2012) research informs that company performance variables explain less of the variation in CC during the 2008 financial crisis for SA Alternative Exchange (ALTX) companies but significantly strong relationships between CC and the company performance indicators total assets, turnover and share price.

5.3.2. Studies rejecting the governance, CEO and shareholder relationships

The Klein (1998) research found little association between firm performance and overall board structure thus supporting the study by Fama and Jensen (1983) that suggests inside (executive) directors provide valuable information.

The article by Coles et al (2001:43) which found no evidence nor any significant relationship between proportion of outside (independent) directors and CEO salary in relation to the performance measures EVA and MVA and that of Coombs and Gilley (2005:837) which observes negative correlation between the CEO's salary and the variables of stakeholder management as a proxy for corporate governance and ROA which supports the findings of Murphy (1990).

Black et al (2006:411) found that better corporate governance does not appear to predict higher firm profitability and that there is limited evidence to suggest that increasing the ratio of outside (independent) directors further increases share prices. A short study spanning two years by Ertugrul and Hegde (2009:157), suggest difficulty in establishing causality between governance ratings and firm performance.

Lastly, in evaluating the ground-breaking Gompers et al (2003) research, a number of studies provide contrasting findings and these include research by:

- Core et al (2006:656) who cannot find that weak corporate governance is the cause of poor shareholder returns.
- Bebchuk et al (2009:783) suggesting that there is no correlation with stronger CGI ranked companies and future abnormal returns.
- Johnson et al (2009:4753) finding that there is zero long term abnormal returns for portfolios sorted on CGI.
- Bhagat and Bolton (2008:271) who observed that board independence is negatively correlated with current and subsequent operating performance.
- Bhagat et al (2008:1869) who suggest that no one corporate governance index (CGI) can predict a firm's performance.

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5.4. Potential shortcomings and improvements in respect of this study

5.4.1. Corporate governance index (CGI)

There is a need to enhance the CGI from a four component index to include more measurable interventions in order to create an improved proxy for corporate governance. By way of an example, this could emulate the CGI models employed by the reviewed researchers, such as Gompers et al (2003), which reflect elements of shareholder activism.

5.4.2. CEO compensation (CC)

For CEO compensation, a method is required to include the cost of share options in the measure. Although a number of companies reflect the cost of options expensed on their income statements alongside the relevant executive's remuneration in their annual reports, this is not applied or alternatively not consistently, applied by all listed companies.

The binomial or the Black-Scholes-Merton method suggested by Ernst and Young (2014) in a publication on option-pricing models could be misleading as each company would have a different set of input values for certain components of the formula. The publication states that, as IFRS2 does not prescribe a specific option-pricing model, whichever method applied must take into account a minimum of six inputs, being:

- Current price of the underlying share.
- Exercise price of the option.
- Expected volatility of the price of the underlying share.
- Expected dividends on the underlying share.
- Risk-free interest rate(s) for the expected term of the option.
- Expected term of the option, taking into account both the contractual term of the option and the expected effects of employees' exercise and post-vesting termination behaviour.

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It can be reasonably deduced that a number of the above inputs have values that could only be provided by the company and it would therefore not be feasible to attempt to calculate a company's share option costs independently.

5.5. Summary

This study rejects the null hypothesis that CEO compensation is not aligned to shareholder returns, as the analysis confirms a strong positive and statistically significant relationship when CEO compensation is applied retrospectively.

The research provides evidence of an improvement in the strength of corporate governance for the period 2004 to 2013. Yet, when observing the limited annual percentage improvement and considering the weaker second period association, it suggests that there is a weakening in corporate governance for South African listed companies.

However, the study finds that the corporate governance measures relating to institutional ownership, board composition and board independence have little, if no, influence on the CEO compensation and total shareholder return relationship.

This result is contrary to the research conclusions drawn by:

- Baysinger and Butler (1985), who find that more independent boards improve performance dividends.
- The Core et al (1999) research which suggest a decrease in CEO compensation (CC) in boards with more independent director and state that CC decreases when there is an institutional shareholder.
- The Hartzell and Starks (2003) research results proposing that stronger institutional ownership positively influences CC.
- Gompers et al (2003) who find a stronger correlation between corporate governance and TSR
- The Larcker et al (2007) results that less conclusively assert that a CGI only has some ability to explain future operating performance and excess TSR.
- Cornett et al (2008), in observing that CC is lower when stronger institutional ownership and more independent directors are present.

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Research that concur with the study's results, include:

- The Klein (1998) research that found little association between firm performance and overall board structure.
- Black et al (2006) who find that better corporate governance does not predict higher firm profitability and that there is little to suggest that an increase in the ratio of outside directors, increases share prices.
- Core et al (2006) who find that weak corporate governance is not correlated to poor shareholder returns.
- The Bhagat and Bolton (2008) investigation which affirms that board independence is negatively correlated with current and subsequent operating performance.
- The Bebchuk et al (2009) study that finds that there is no correlation with stronger CGI ranked companies and future abnormal returns.
- Bebchuk et al (2009:783) who suggest that there is no correlation with stronger CGI ranked companies and future abnormal returns.
- Johnson et al (2009:4753) finding that there is no abnormal returns for portfolios sorted on CGI.

CHAPTER 6 - Conclusion

The introduction, Chapter 1, highlighted the negative media headlines, research articles and reports suggesting, amongst other;

- The abnormal growth in CEO compensation.
- The alleged non-alignment of CEO remuneration to shareholder wealth creation.

The results of this study submits that CEOs are remunerated in line with the value created for shareholders and it is observed that the annual percentage returns to shareholders is much greater than the annual percentage pay increases apportioned to CEOs.

Additionally, the research attempted to establish whether companies with stronger corporate governance interventions resulted in a closer association between CEO compensation and TSR.

The analysis of these results suggest that the corporate governance measures used in the corporate governance index, had virtually no influence on the CEO compensation and TSR relationship.

Overall, the study provides inconsistent views on the influence of corporate governance, with some evidence of an improvement in the strength of corporate governance over the research period and conflicting suggestions of a weakening when observing the limited annual percentage improvement and when considering the weaker second period results.

Further, it appears that the higher CGI ranked companies are designing CC packages that are aligned to TSR on a year to year basis, whereas the lower CGI ranked companies' compensation packages give the impression that CEOs are rewarded (or penalised) retrospectively.

The findings support and also contradict the results of a number of investigations conducted by researchers' world-wide.

The limitations of the study include;

- The size of the sample.
- The limited number of elements of the corporate governance index.
- The exclusion of long term incentives as part of CEO compensation.

Notwithstanding the above, the results of the research provide weighty evidence of a strong positive alignment between CEO compensation and total shareholder return, thereby refuting popular belief.

Potential areas for future research could include;

- An enhancement of the quality and number of elements in the CGI to provide an improved proxy for corporate governance.
- A larger sample subset as part of a longer period, longitudinal cohort study.
- A study that attempts to establish the corporate governance measures prevalent in companies that provide superior returns to shareholders.
- An improvement of the CEO compensation measure that includes the cost of share options.

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APPENDICES

APPENDIX 1

Data Control Sheet									
Alpha	**Long Name**	**MarketCap**	**Listed**	**CGI**	**Basic**	**ST Bonus**	**Other**	**Options**	**TSR**
AFE	AECI Limited	16,030,142,500	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
ABL	African Bank Inv Ltd	18,088,173,422	Liquidated	Nil	2003 to 2005 & 2011	2003 to 2005 & 2011 to 2013	2003 to 2005 & 2011	2003 to 2011 & 2013	Nil
AVI	AVI Ltd	19,792,564,933	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
BGA	Barclays Africa Grp Ltd	112,115,027,298	Pre 2003	Nil	Nil	Nil	Nil	2005 to 2008	Nil
BTI	British American Tob plc	1,135,076,441,133	Pre 2003	Nil	Nil	Nil	Nil	Nil	2003 to 2007
CML	Coronation Fund Mngrs Ld	27,969,936,196	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
DTC	Datatec Ltd	10,210,019,656	Pre 2003	Nil	Nil	Nil	Nil	2003 to 2013	Nil
DST	Distell Group Ltd	30,155,797,424	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
FSR	Firstrand Ltd	202,345,727,218	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
GND	Grindrod Ltd	16,839,451,751	Pre 2003	Nil	2003	2003	2003	2003	Nil
GRT	Growthpoint Prop Ltd	47,005,234,789	Pre 2003	Nil	2003 to 2007	2003 to 2007	2003 to 2007	2003 to 2007	Nil
HAR	Harmony GM Co Ltd	11,284,469,912	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
ITU	Intu Properties plc	53,123,282,990	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
INL	Investec Ltd	21,078,622,411	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
LBH	Liberty Holdings Ltd	34,802,208,557	Pre 2003	Nil	Nil	Nil	Nil	Nil	2003 to 2013
LON	Lonmin plc	30,292,573,743	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
MTN	MTN Group Ltd	406,538,975,593	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
NTC	Netcare Limited	38,412,306,693	Pre 2003	Nil	Nil	2004	2011 & 2013	2003, 2004, 2011 & 2013	Nil
OCE	Oceana Group Ltd	9,801,144,874	Pre 2003	Nil	2012 to 2013	2004, 2005, 2012 & 2013	2012 & 2013	2008, 2010 to 2013	Nil
PPC	PPC Limited	19,008,920,947	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
RES	Resilient Prop Inc Fund	16,280,318,385	Pre 2003	Nil	2003 & 2004	2003 to 2010	2007 to 2013	2003 to 2006 & 2011 to 2013	Nil
RMH	RMB Holdings Ltd	68,255,850,590	Pre 2003	Nil	2003	2003	2003	2003	Nil
SUI	Sun International Ltd	10,876,537,062	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil
TRE	Trencor Ltd	12,217,692,759	Pre 2003	Nil	Nil	Nil	Nil	Nil	Nil

UNIVERSITY of the WESTERN CAPE

APPENDIX 2

No.	Long Name	Market Cap	Reason for exclusion from sample
1	Adcock Ingram Hldgs Ltd	12,448,455,243	Listed 2008
2	African Bank Inv Ltd	18,088,173,422	Liquidated, not all annual reports available
3	Anglogold Ashanti Ltd	49,489,915,065	Annual reports do not reflect complete information
4	Attacq Limited	11,157,819,693	Listed 2006
5	Barloworld Ltd	23,112,936,763	Annual reports do not reflect complete information
6	Brait SE	26,934,897,529	Annual reports do not reflect complete information
7	British American Tob plc	1,135,076,441,133	Annual reports do not reflect complete information
8	Capital Property Fund	17,114,403,871	Annual reports do not reflect complete information
9	Capital&Counties Prop plc	42,821,230,220	Listed 2010
10	Compagnie Fin Richemont	545,907,600,000	Annual reports do not reflect complete information
11	Discovery Ltd	50,013,216,955	Annual reports do not reflect complete information
12	Exxaro Resources Ltd	52,449,596,862	Listed 2006
13	Famous Brands Ltd	9,503,455,576	Annual reports do not reflect complete information
14	Glencore Xstrata plc	727,789,403,591	Listed 2011
15	Growthpoint Prop Ltd	47,005,234,789	Annual reports do not reflect complete information
16	Illovo Sugar Ltd	12,825,745,377	Annual reports do not reflect complete information
17	Imperial Holdings Ltd	42,539,203,800	Annual reports do not reflect complete information
18	Investec plc	46,014,435,992	Used Investec Ltd annual reports
19	Kumba Iron Ore Ltd	142,829,025,170	Listed 2006
20	Liberty Holdings Ltd	34,802,208,557	Annual reports do not reflect complete information
21	Life Healthc Grp Hldgs Ltd	43,626,900,135	Listed 2010
22	MMI Holdings Limited	39,716,033,610	Listed 2010
23	Mondi Ltd	21,260,841,608	Annual reports do not reflect complete information
24	Mondi plc	66,540,361,458	Annual reports do not reflect complete information
25	Murray & Roberts Hldgs	11,923,375,324	Annual reports do not reflect complete information
26	Nampak Ltd	28,620,592,881	Annual reports do not reflect complete information
27	Naspers Ltd -N-	455,876,327,282	Annual reports do not reflect complete information
28	Nedbank Group Ltd	107,163,502,530	Annual reports do not reflect complete information
29	New Europe Prop Inv plc	16,568,083,116	Listed 2008
30	Northam Platinum Ltd	16,068,615,780	Annual reports do not reflect complete information
31	Oceana Group Ltd	9,801,144,874	Annual reports do not reflect complete information
32	Old Mutual plc	160,572,396,338	Annual reports do not reflect complete information
33	Omnia Holdings Ltd	13,581,102,159	Annual reports do not reflect complete information
34	Pick N Pay Holdings Ltd	11,863,104,345	Annual reports do not reflect complete information
35	Pick n Pay Stores Ltd	24,980,660,692	Annual reports do not reflect complete information
36	Pioneer Foods Group Ltd	21,224,459,727	Annual reports do not reflect complete information
37	Rand Merchant Ins Hldgs Ltd	40,782,145,098	Listed 2011
38	RCL Foods Limited	10,951,490,690	Annual reports do not reflect complete information
39	Redefine International P.L.C	11,829,745,193	Used Redefine Ltd annual reports
40	Reinet Investments S.C.A	39,560,545,643	Listed 2009
41	Remgro Ltd	99,983,525,813	Annual reports do not reflect complete information
42	Resilient Prop Inc Fund	16,280,318,385	Annual reports do not reflect complete information
43	Reunert Ltd	13,797,769,023	Annual reports do not reflect complete information
44	RMB Holdings Ltd	68,255,850,590	Annual reports do not reflect complete information
45	Royal Bafokeng Platinum Ltd	9,798,864,137	Listed 2010
46	SABMiller plc	890,266,923,303	Annual reports do not reflect complete information
47	Sanlam Limited	111,804,000,000	Annual reports do not reflect complete information
48	Santam Limited	22,231,850,559	Annual reports do not reflect complete information
49	Sasol Limited	334,337,028,732	Annual reports do not reflect complete information
50	Shoprite Holdings Ltd	93,575,031,440	Annual reports do not reflect complete information
51	Standard Bank Group Ltd	209,381,387,046	Annual reports do not reflect complete information
52	Steinhoff Int Hldgs Ltd	91,793,716,017	Annual reports do not reflect complete information
53	Telkom SA SOC Ltd	14,581,949,144	Annual reports do not reflect complete information
54	The Foschini Group Limited	21,256,983,921	Annual reports do not reflect complete information
55	The Spar Group Ltd	22,772,262,809	Listed 2005
56	Tiger Brands Ltd	51,129,765,633	Annual reports do not reflect complete information
57	Tongaat Hulett Ltd	12,353,243,490	Annual reports do not reflect complete information
58	Truworths Int Ltd	35,695,143,987	Annual reports do not reflect complete information
59	Tsogo Sun Holdings Ltd	31,461,575,281	Annual reports do not reflect complete information
60	Vodacom Group Ltd	197,897,882,000	Listed 2009
61	Wilson Bayly Hlm-Ovc Ltd	9,636,000,000	Annual reports do not reflect complete information
62	Woolworths Holdings Ltd	63,228,921,384	Annual reports do not reflect complete information

UNIVERSITY of the
WESTERN CAPE

APPENDIX 3

Company: Corporate Governance Index 2004 to 2013

No.	Description	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	Totals	Ave.
	Board Composition												
1	Chairman is independent non-executive director = 1, otherwise = 0	1	1	1	1	1	1	1	1	1	1		
2	The board should comprise a balance of power, with a majority of non-executive directors = 1, otherwise = 0	1	1	1	1	1	1	1	1	1	1		
3	The majority of non-executive directors should be independent = 1, otherwise = 0	1	1	1	1	1	1	1	1	1	1		
	Ownership												
4	Institutional/Other shareholding more than 10% (total of institutional more than 5%)	1	1	1	1	1	1	1	1	1	1		
		4	4	4	4	4	4	4	4	4	4	**40**	**40%**

Company: CEO Compensation 2003 to 2013

No.	Description	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	Totals (10Y)	Ave.	Ave. Growth
1	Basic remuneration	2,945	3,250	3,002	2,806	2,553	2,124	2,652	2,472	2,244	1,920	1,467	25,968	2,597	77.01%
	% annual variance	-9.38%	8.26%	6.99%	9.91%	20.20%	-19.91%	7.28%	10.16%	16.88%	30.88%			8.13%	
2	Short term incentives	2,968	3,124	3,736	2,708	-	1,475	3,732	2,650	1,259	1,511	936	23,163	2,316	147.47%
	% annual variance	0.00%	-16.38%	37.96%	100.00%	-100.00%	-60.48%	40.83%	110.48%	-16.68%	61.43%			15.72%	
3	Other (fringe benefits)	1,015	893	840	802	741	622	1,315	1,087	881	431	376	8,627	863	129.44%
	% annual variance	13.66%	6.31%	4.74%	8.23%	19.13%	-52.70%	20.98%	23.38%	104.41%	14.63%			16.28%	
4	Total remuneration:	6,928	7,267	7,578	6,316	3,294	4,221	7,699	6,209	4,384	3,862	2,779	57,758	5,776	107.84%
	% annual variance	-4.66%	-4.10%	19.98%	91.74%	-21.96%	-45.17%	24.00%	41.63%	13.52%	38.97%			15.39%	

Company: TSR 2003 to 2013

No.	Description	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003			
1	Share price movement	12500	7980	8264	8250	6200	5100	7900	6825	5300	3900	3400	91.00		
2	Dividends paid	315	263	257	205	90	231	213	205	175	138		20.92		
	Total (Share price plus dividend)	12815	8243	8521	8455	6290	5331	8113	7030	5475	4038	3400	111.92		329.18%
	TSR per year	60.59%	-0.25%	3.28%	36.37%	23.33%	-32.52%	18.87%	32.64%	40.38%	18.76%				

APPENDIX 4

Corporate Governance Index (CGI): Period 2004 to 2013

Companies	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Mean	Mean %	CGI Rank
AECI Limited	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
African Rainbow Min Ltd	3	3	3	3	3	3	3	3	3	3	3.00	75.00%	24
Anglo American Plat Ltd	2	2	2	2	2	3	2	3	3	3	2.40	60.00%	36
Anglo American plc	3	3	3	3	3	3	3	3	3	3	3.00	75.00%	24
ArcelorMittal SA Limited	3	4	3	3	3	3	3	4	4	4	3.40	85.00%	18
Aspen Pharmacare Hldgs Ltd	2	2	3	3	2	3	3	2	2	3	2.50	62.50%	35
Assore Ltd	1	1	1	1	1	2	2	2	2	2	1.50	37.50%	38
Aveng Group Limited	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
AVI Ltd	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
Barclays Africa Grp Ltd	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
BHP Billiton plc	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
Bidvest Ltd	2	2	2	2	3	3	3	3	3	4	2.70	67.50%	30
Capitec Bank Hldgs Ltd	3	2	3	3	3	3	2	2	2	3	2.60	65.00%	32
Clicks Group Ltd	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
Coronation Fund Mngrs Ld	3	3	3	2	4	4	4	4	4	4	3.50	87.50%	17
Datatec Ltd	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
Distell Group Ltd	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
Firstrand Ltd	3	3	3	3	3	3	3	3	3	3	3.00	75.00%	24
Gold Fields Ltd	4	4	4	4	4	4	4	3	3	4	3.80	95.00%	14
Grindrod	3	3	3	3	3	3	3	3	3	2	2.90	72.50%	28
Harmony GM Co Ltd	3	3	3	3	3	3	3	3	3	3	3.00	75.00%	24
Hosken Cons Inv Ltd	2	2	2	2	3	3	3	3	3	3	2.60	65.00%	32
Hyprop Inv Ltd	3	3	3	3	3	4	3	3	3	4	3.20	80.00%	21
Impala Platinum Hlgs Ltd	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
Intu Properties plc	3	3	3	2	1	3	2	3	2	2	2.40	60.00%	36
Investec Ltd	3	3	3	3	3	3	3	3	4	4	3.20	80.00%	21
Lonmin plc	2	3	4	4	4	4	4	4	4	4	3.70	92.50%	16
Massmart Holdings Ltd	3	3	3	3	3	3	3	4	4	4	3.30	82.50%	20
Mediclinic Internat Ltd	3	3	3	3	2	3	2	2	2	3	2.60	65.00%	32
Mr Price Group Ltd	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
MTN Group Ltd	4	4	4	4	4	4	4	4	4	3	3.90	97.50%	13
Netcare Limited	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
PPC Limited	2	4	4	4	4	4	4	4	4	4	3.80	95.00%	14
PSG Group Ltd	3	3	3	3	3	3	3	2	3	1	2.70	67.50%	30
Redefine Properties Ltd	4	4	4	4	4	4	4	4	4	4	4.00	100.00%	1
Sappi Ltd	3	3	3	4	4	4	4	3	3	3	3.40	85.00%	18
Sun International Ltd	3	3	3	4	3	3	3	3	3	3	3.10	77.50%	23
Trencor Ltd	3	3	3	3	3	2	3	3	3	3	2.90	72.50%	28
Mean per year	3.16	3.24	3.29	3.29	3.29	3.45	3.34	3.34	3.37	3.42			
Mean %	78.95%	80.92%	82.24%	82.24%	82.24%	86.18%	83.55%	83.55%	84.21%	85.53%			
Mean annual % change	0.00%	2.50%	1.63%	0.00%	0.00%	4.80%	-3.05%	0.00%	0.79%	1.56%			
Ranked per year	1	2	5	5	5	10	7	7	8	9			

UNIVERSITY of the
WESTERN CAPE

APPENDIX 5

CEO Compensation (CC): Period 2004 to 2103

Companies	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Mean	CGI Rank
AECI Limited	38.97%	13.52%	41.63%	24.00%	-45.17%	-21.96%	91.74%	19.98%	-4.10%	-4.66%	15.39%	1
African Rainbow Min Ltd	-6.21%	-42.72%	-5.22%	93.46%	54.61%	-22.32%	73.68%	-12.68%	-6.03%	24.89%	15.15%	24
Anglo American Plat Ltd	3.95%	-0.60%	31.48%	207.14%	-29.33%	-42.00%	14.51%	24.26%	65.28%	-37.61%	23.71%	36
Anglo American plc	8.43%	-0.52%	24.28%	39.71%	-41.24%	3.32%	-2.84%	38.21%	10.03%	35.28%	11.47%	24
ArcelorMittal SA Limited	8.25%	77.20%	-42.87%	69.02%	44.62%	-1.60%	-15.14%	52.54%	-24.29%	1.18%	16.89%	18
Aspen Pharmacare Hldgs Ltd	54.96%	48.83%	14.75%	1.03%	12.97%	16.29%	16.81%	6.00%	11.34%	5.73%	18.87%	35
Assore Ltd	10.98%	69.05%	25.19%	45.32%	68.98%	1.58%	-0.32%	14.02%	14.15%	-1.26%	24.77%	38
Aveng Group Limited	-14.20%	30.30%	46.86%	20.84%	50.00%	-51.93%	18.54%	-4.21%	12.68%	-4.68%	10.42%	1
AVI Ltd	18.41%	-1.17%	27.59%	7.62%	40.58%	-2.55%	28.97%	27.19%	10.04%	1.12%	15.78%	1
Barclays Africa Grp Ltd	23.65%	3.57%	55.45%	7.28%	-3.31%	-55.21%	36.62%	-40.07%	0.01%	132.19%	16.02%	1
BHP Billiton plc	-13.16%	120.52%	-30.50%	-50.01%	70.32%	8.70%	14.27%	2.76%	-40.89%	115.73%	19.77%	1
Bidvest Ltd	32.96%	83.79%	10.41%	17.66%	14.54%	-5.34%	20.07%	22.87%	23.10%	-2.19%	21.79%	30
Capitec Bank Hldgs Ltd	30.25%	40.29%	340.98%	-51.03%	9.59%	2.40%	76.16%	24.76%	-5.76%	2.66%	47.03%	32
Clicks Group Ltd	77.99%	1.27%	-70.35%	184.78%	11.59%	43.55%	185.69%	-4.59%	-24.69%	14.52%	41.98%	1
Coronation Fund Mngrs Ld	313.06%	-34.28%	47.57%	13.81%	-26.01%	58.25%	30.04%	52.80%	-7.17%	-20.96%	42.71%	17
Datatec Ltd	41.17%	36.58%	30.09%	-4.42%	14.14%	-25.40%	67.45%	15.37%	-4.70%	-34.58%	13.57%	1
Distell Group Ltd	15.88%	11.48%	30.11%	18.02%	10.54%	-9.97%	1.66%	16.26%	6.58%	49.31%	14.99%	1
Firstrand Ltd	9.31%	7.40%	27.68%	30.83%	-18.56%	-20.92%	10.30%	29.39%	12.95%	13.57%	10.19%	24
Gold Fields Ltd	5.86%	0.78%	19.17%	12.10%	73.67%	-18.15%	23.07%	126.40%	-39.01%	-40.28%	16.36%	14
Grindrod	-18.83%	84.72%	-4.35%	-25.37%	25.64%	17.24%	-42.55%	169.06%	27.53%	3.27%	23.64%	28
Harmony GM Co Ltd	3.60%	-58.02%	13.74%	52.80%	83.28%	-0.37%	-1.14%	20.82%	-8.48%	26.64%	13.29%	24
Hosken Cons Inv Ltd	54.40%	15.16%	4.64%	78.25%	-26.48%	-13.00%	62.09%	1.97%	8.94%	19.20%	20.52%	32
Hyprop Inv Ltd	26.32%	47.25%	13.41%	15.77%	12.07%	-41.19%	62.20%	232.62%	-41.81%	-67.79%	25.88%	21
Impala Platinum Hlgs Ltd	3.93%	24.50%	26.17%	-31.20%	32.04%	59.88%	-5.76%	2.31%	14.76%	-42.54%	8.41%	1
Intu Properties plc	8.36%	-27.69%	43.03%	-0.39%	-8.72%	62.42%	-41.11%	32.53%	8.19%	32.26%	10.89%	36
Investec Ltd	68.10%	43.59%	58.21%	55.08%	-3.99%	-49.67%	-15.66%	22.50%	-73.76%	66.67%	17.11%	21
Lonmin plc	159.36%	18.84%	-25.54%	-13.43%	10.29%	1.98%	19.13%	-33.46%	-23.51%	-0.34%	11.33%	16
Massmart Holdings Ltd	8.50%	-23.27%	25.01%	140.46%	-52.52%	-13.84%	-18.11%	32.02%	-43.93%	33.56%	8.79%	20
Mediclinic Internat Ltd	16.25%	15.38%	97.42%	13.58%	-26.29%	34.38%	25.74%	13.21%	9.41%	10.96%	21.00%	32
Mr Price Group Ltd	48.32%	-0.37%	167.00%	-11.36%	-34.15%	31.84%	55.42%	-33.18%	26.15%	6.85%	25.65%	1
MTN Group Ltd	17.19%	-26.09%	37.63%	15.82%	22.77%	-21.36%	93.51%	131.64%	-66.54%	22.52%	22.71%	13
Netcare Limited	-30.12%	49.05%	139.85%	-2.83%	0.98%	-1.84%	40.67%	20.62%	0.96%	5.09%	22.24%	1
PPC Limited	15.45%	17.61%	23.15%	84.12%	58.13%	13.92%	-21.14%	8.99%	7.03%	48.24%	25.55%	14
PSG Group Ltd	-11.49%	-2.60%	61.30%	27.69%	-3.23%	-76.65%	14.55%	57.70%	26.82%	16.00%	11.01%	30
Redefine Properties Ltd	22.22%	10.00%	18.84%	50.83%	21.95%	31.42%	5.52%	-21.62%	13.11%	-46.16%	10.61%	1
Sappi Ltd	-6.48%	17.02%	229.47%	-84.11%	17.78%	0.40%	-13.67%	111.94%	-24.93%	-36.61%	21.08%	18
Sun International Ltd	10.61%	40.38%	7.35%	-19.34%	16.55%	-1.57%	-31.50%	26.70%	-10.20%	25.31%	6.43%	23
Trencor Ltd	21.53%	6.86%	2.43%	14.78%	7.06%	-17.33%	65.00%	16.51%	16.55%	12.67%	14.61%	28
Mean annual % change	28.36%	18.88%	41.13%	27.59%	12.25%	-3.33%	24.85%	32.21%	-3.27%	10.15%		

UNIVERSITY of the WESTERN CAPE

APPENDIX 6

Total shareholder returns (TSR): Period 2004 to 2013

Companies	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Mean	CGI Rank
AECI Limited	18.76%	40.38%	32.64%	18.87%	-32.52%	23.33%	36.37%	3.28%	-0.25%	60.59%	20.15%	1
African Rainbow Min Ltd	-15.00%	-0.03%	41.95%	159.05%	129.98%	-52.98%	25.79%	19.58%	-9.41%	-6.72%	29.22%	24
Anglo American Plat Ltd	-26.47%	126.47%	98.91%	24.07%	-45.29%	53.11%	-11.55%	-22.35%	-16.10%	-11.74%	16.91%	36
Anglo American plc	-3.70%	65.79%	65.72%	24.06%	-48.38%	51.42%	8.84%	-12.11%	-9.81%	-8.32%	13.35%	24
ArcelorMittal SA Limited	141.32%	-0.69%	66.07%	57.80%	-30.02%	16.45%	-21.63%	-12.74%	-47.51%	3.61%	17.27%	18
Aspen Pharmacare Hldgs Ltd	67.74%	91.18%	55.97%	3.29%	-14.05%	72.17%	40.27%	11.76%	51.69%	81.68%	46.17%	35
Assore Ltd	-20.19%	76.56%	10.18%	127.92%	200.93%	-37.48%	47.25%	62.36%	38.65%	9.07%	51.52%	38
Aveng Group Limited	-14.32%	70.00%	76.76%	136.83%	21.92%	-37.16%	2.57%	8.13%	1.68%	-16.48%	24.99%	1
AVI Ltd	23.93%	39.06%	8.56%	53.55%	-30.24%	38.07%	35.88%	50.23%	72.53%	24.10%	31.57%	1
Barclays Africa Grp Ltd	65.57%	43.08%	28.54%	-6.79%	2.79%	22.93%	12.49%	5.60%	21.16%	-10.04%	18.53%	1
BHP Billiton plc	39.62%	61.76%	65.45%	43.00%	54.80%	-38.49%	18.50%	35.53%	-7.99%	12.96%	28.51%	1
Bidvest Ltd	28.44%	44.72%	41.73%	50.34%	-29.77%	2.20%	30.46%	27.41%	25.59%	38.54%	25.97%	30
Capitec Bank Hldgs Ltd	130.77%	162.07%	111.41%	21.74%	8.11%	-19.46%	180.24%	97.45%	19.02%	4.72%	71.61%	32
Clicks Group Ltd	21.05%	9.05%	31.88%	52.00%	5.65%	36.39%	89.96%	14.53%	41.53%	-1.72%	30.03%	1
Coronation Fund Mngrs Ld	32.98%	74.57%	18.73%	55.67%	-28.37%	42.61%	108.57%	46.86%	65.30%	134.71%	55.16%	17
Datatec Ltd	196.00%	-35.20%	132.53%	55.91%	-2.08%	-58.38%	157.24%	19.19%	29.50%	11.64%	50.64%	1
Distell Group Ltd	33.08%	81.53%	55.88%	43.87%	-10.78%	25.27%	23.75%	13.07%	30.01%	39.20%	33.49%	1
Firstrand Ltd	39.40%	41.52%	26.60%	47.85%	-37.50%	9.92%	33.93%	34.27%	38.09%	14.78%	24.89%	24
Gold Fields Ltd	-26.19%	17.75%	114.57%	-31.33%	-7.36%	-4.90%	31.74%	6.05%	-3.96%	-68.09%	2.83%	14
Grindrod	246.64%	67.97%	27.53%	55.13%	-28.86%	20.13%	9.62%	-24.56%	15.56%	79.19%	46.83%	28
Harmony GM Co Ltd	-33.05%	-10.73%	95.88%	-12.12%	-5.26%	-15.26%	2.38%	11.24%	-13.95%	-52.61%	-3.35%	24
Hosken Cons Inv Ltd	-1.69%	755.71%	37.93%	52.13%	28.58%	-47.78%	95.47%	0.95%	5.01%	40.26%	96.66%	32
Hyprop Inv Ltd	55.49%	61.01%	36.29%	23.90%	0.18%	16.98%	32.10%	0.16%	44.77%	12.68%	28.36%	21
Impala Platinum Hlgs Ltd	15.84%	38.76%	136.24%	42.10%	54.46%	-41.57%	12.44%	9.08%	-20.21%	-23.46%	22.37%	1
Intu Properties plc	35.67%	5.32%	80.15%	-19.93%	-51.87%	9.15%	-25.62%	-5.98%	30.57%	17.51%	7.50%	36
Investec Ltd	72.93%	47.87%	81.87%	54.11%	-34.57%	-28.96%	65.67%	-12.43%	-6.44%	41.69%	28.17%	21
Lonmin plc	26.76%	16.33%	159.34%	37.01%	-37.03%	-36.10%	-6.01%	-29.10%	-43.15%	-30.27%	5.78%	16
Massmart Holdings Ltd	63.29%	42.51%	9.67%	90.43%	-24.03%	35.92%	52.33%	21.75%	43.46%	-29.76%	30.55%	20
Mediclinic Internat Ltd	65.33%	31.25%	64.71%	24.17%	-19.08%	12.62%	28.98%	10.11%	32.00%	73.49%	32.36%	32
Mr Price Group Ltd	80.43%	51.57%	93.97%	43.97%	-35.03%	40.55%	71.26%	60.23%	59.15%	28.23%	49.43%	1
MTN Group Ltd	178.55%	93.16%	38.70%	51.72%	-13.86%	10.43%	18.25%	12.50%	29.30%	28.02%	44.68%	13
Netcare Limited	25.37%	37.37%	93.44%	-1.29%	-28.16%	30.30%	37.95%	-1.88%	41.46%	37.85%	27.24%	1
PPC Limited	79.91%	71.27%	27.11%	45.03%	-29.92%	14.88%	-0.56%	-23.19%	31.01%	9.52%	22.51%	14
PSG Group Ltd	16.81%	93.51%	233.36%	26.21%	-20.67%	-17.84%	55.31%	98.96%	10.69%	32.70%	52.90%	30
Redefine Properties Ltd	35.65%	70.29%	34.70%	43.86%	0.90%	13.85%	18.72%	12.39%	23.37%	2.57%	25.63%	1
Sappi Ltd	1.58%	-16.22%	36.99%	6.41%	-21.88%	-64.63%	26.78%	-33.53%	-0.80%	6.72%	-5.86%	18
Sun International Ltd	43.32%	57.65%	39.85%	79.79%	-42.80%	-13.25%	9.38%	13.45%	0.16%	9.97%	19.75%	23
Trencor Ltd	43.43%	47.48%	47.95%	-5.57%	-26.07%	40.05%	27.24%	24.22%	59.26%	30.18%	28.82%	28
Mean annual % change	46.98%	67.68%	64.73%	41.44%	-5.98%	3.28%	36.38%	14.54%	17.92%	16.50%		

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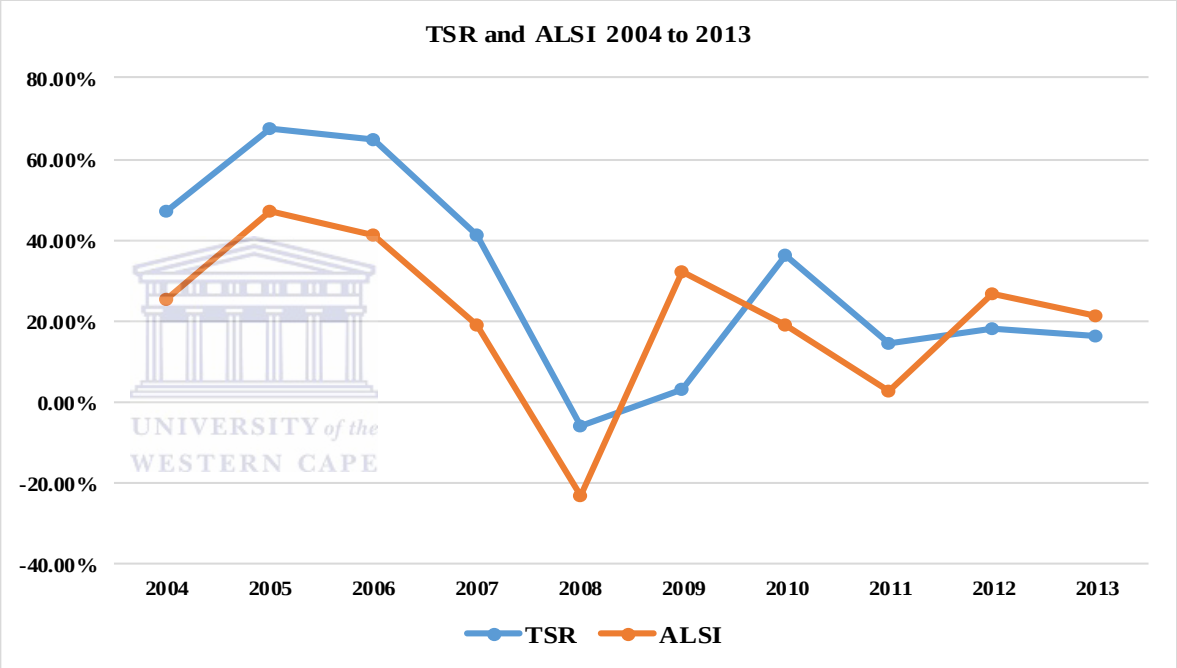
APPENDIX 7

TSR and ALSI Relationship. Results Statistical Analysis - Simple Linear Regression TSR (x variable) ALSI (y variable)

	TSR	ALSI
2004	46.98%	25.44%
2005	67.68%	47.25%
2006	64.73%	41.23%
2007	41.44%	19.19%
2008	-5.98%	-23.23%
2009	3.28%	32.13%
2010	36.38%	18.98%
2011	14.54%	2.57%
2012	17.92%	26.68%
2013	16.50%	21.43%



SUMMARY OUTPUT

Regression Statistics		**Interpretation**
Multiple R	0.719387662	**Strong positive**
R Square	0.517518608	**Moderate**
Adj. R Square	0.457208433	
Standard Error	0.146897685	
Observations	10	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	**Interpretation**
Regression	1	0.185167725	0.185167725	8.580950322	0.019017761	**p-value < 0.05 therefore reject H_0**
Residual	8	0.172631439	0.02157893			
Total	9	0.357799164				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.038113292	0.075290209	0.506218435	0.626355778	-0.135506241	0.211732825	-0.135506241	0.211732825
TSR	0.571967409	0.195255641	2.929325916	0.019017761	0.121707094	1.022227724	0.121707094	1.022227724