The impact of corporate governance on firm performance: A sectoral analysis of JSE listed companies

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ABSTRACT

Corporate Governance has become an important business focus and has gained prominence globally and specifically in South Africa with the publication of the various King codes. Good corporate governance is usually associated with transparency, accountability and investor confidence however there is limited literature on the impact corporate governance can have on firm financial performance. This study analysed 50 JSE listed companies from 10 sectors over a five-year period from 2020 to 2024 in order to determine the levels of adherence to corporate governance principles and to determine the existence of any relationship between corporate governance and financial performance. The results show that there is generally high and increasing adherence to corporate governance practices, however concerning negative trends in the basic materials and real estate sectors were detected. When all companies and sectors were analysed together, the results show that there is no significant relationship between corporate governance and financial performance however when a sectoral analysis was conducted, strong positive correlations between corporate governance and certain financial metrics were observed in the financials and industrials sectors. The study therefore concludes that there is a direct relationship between adoption of corporate governance practices and financial performance in sectors that are highly capital intensive.

DECLARATION

I declare that this report is my own original work under the supervision of Dr F Mlambo (Wits Business School). It is being submitted for the degree of Master's in Business Administration to the University of the Witwatersrand, Johannesburg, South Africa. It has not been submitted before for any degree or examination in any other university.

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Devendran Govender

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To my supervisor, Dr Farai Mlambo for his guidance, support and willingness to get involved in the study right from the outset.

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LIST OF ACRONYMS

Acronym	Definition
AAS	Accounting and Auditing Subindex
BCS	Board Characteristics Subindex
CEO	Chief Executive Officer
CGI	Corporate Governance Index
EBIT	Earnings before interest and tax
ICB	Industry Classification Benchmark
IRESS	Integrated Real-time Equity System (Financial Database used by WBS)
JSE	Johannesburg Stock Exchange
MBA	Master's in Business Administration
NED	Non-executive director
RMS	Risk Management Subindex
ROA	Return on Assets
ROE	Return on Equity
SPSS	Statistical Package for the Social Sciences (Software used by WBS for analysing datasets)

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1. INTRODUCTION

1.1. Statement of Purpose

The purpose of this research project is to analyse a sample of JSE listed companies over a five year period (2020 – 2024), to gauge the levels of adoption of corporate governance practices, to investigate linkages between higher levels of corporate governance and company performance and to investigate the effect of corporate governance on firm performance across the various sectors* of the South African economy. Using secondary data from publicly available annual reports and the IRESS financial database, the study determines how different governance variables (using the corporate governance index created by Naidu et al., (2024) impacts firm performance (revenue growth, operating profit (EBIT), share price, return on equity and return on assets).

1.2. Background of the Study

The costs of poor corporate governance are well known due to global scandals such as Enron and WorldCom (Asiedu & Mensah, 2023). What is not clear however, is whether the implementation of good corporate governance can increase a firm's performance in addition to preventing high costs from being incurred (Sebone, 2014).

Previous studies on the topic provided mixed results with some indicating that there is a strong positive relationship between corporate governance and firm performance while others find that there is no relationship (Sebone, 2014). This topic therefore remains vague and further research is needed to fully understand the relationship and whether other aspects play a role in defining this relationship.

*The terminology "Sector" is used in this report for convenience and familiarity however "Sector" as used in the study refers to the new JSE ICB Classification for "Industry"

1.3. Problem Statement

Weak corporate governance measures have led to significant destruction of wealth in the past (Kaunda & Pelser, 2023) and that many companies choose to adhere to the latest King code to varying degrees (Bourg, 2015). Several studies have been performed in the past however there is no universally accepted view on whether the application of good corporate governance also increases the performance of a company (Sebone, 2014).

This study seeks to provide further insight into whether there are other benefits to a firm when implementing good corporate governance other than mitigating the risk of losses due to unethical behaviour or from being used as a compliance tool for stakeholder management.

It is also noted that results of similar studies performed in various parts of the world yielded inconsistent results (Saebah et al., 2023) indicating that this link may depend on certain aspects unique to certain countries or industries. A secondary objective of this study is to determine if there is a difference in the link between corporate governance and firm performance in the various sectors of the South African economy.

1.4. Research Objectives

The objective of this research is to determine and quantify the link between the implementation of corporate governance principles and firm financial performance and to evaluate this relationship among the various sectors of the South African economy. Two additional objectives added during the data analysis was to gauge the levels of adoption of corporate governance and to test if there is a link between market capitalisation and levels of corporate governance.

1.5. Research Questions

1. What are the levels of adoption of corporate governance among JSE listed firms and the difference between sectors?
2. Is there a link between market capitalisation and the implementation of corporate governance principles?
3. Is there a link between the implementation of corporate governance principles and firm performance in South Africa?
4. Is there a difference in the link between corporate governance and firm performance between the various sectors of the economy in South Africa?

1.6. Rationale of the Study

Various studies on the link between corporate governance and firm performance yielded contrasting results (Sebone, 2014) which indicates that this relationship is not uniform across the globe and across different industries (Ayodele et al., 2016). Within the South African context, a few studies have investigated the link between corporate governance and firm performance however none have analysed this link per sector of the economy.

This study aims to close that gap by assessing the link between corporate governance and firm performance for selected JSE companies and to contrast the results over the various economic sectors. The idea is to determine whether corporate governance has a common effect on firm performance or if there are industry specific distinctions that govern this relationship.

The findings of this study will be useful as it will provide unique insight into the link between corporate governance and firm performance for the various sectors of the economy. Such information will undoubtedly be valuable to shareholders, investors, executives, and the general public (Bourg, 2015).

1.7. Delimitations of the study

The study is limited to a subset of five firms per sector (fifty companies in total) and considers only companies listed on the JSE. The study also uses only secondary data from annual reports and the IRESS financial database and hence is based on the information which has been voluntarily disclosed by the various companies.

1.8. Assumptions

It is assumed that all information related to corporate governance is available, accurate and can be extracted from company annual reports or financial databases.

The study has a longitudinal nature, and it is assumed that the impact of corporate governance on firm performance will manifest within the analysis period of five years. The period of five years was chosen subjectively by the author and included the years with the most recent published annual reports.

It is assumed that the results of the sample of companies selected can be used to infer dynamics which can be applied to the entire population.

It is assumed that the effects of specific economic events (e.g. recovery from COVID, Avian flu, etc…) do not have a significant impact on the findings.

As the study uses firms which are currently listed on the JSE, the potential impact of survivorship bias is not included.

2. LITERATURE REVIEW

2.1. Introduction

A lack of corporate governance has led to grand theft by company executives and the collapse of mega corporations (Saebah et al., 2023). Various codes of corporate governance have been developed around the world, notably the Cadbury report of 1992 in the UK and the various King codes in South Africa (Sebone, 2014).

While good corporate governance can minimise the probability of irregularities and assists to overcome the agency problem, much interest has surfaced around the financial benefit to companies when embracing corporate governance (Munisi & Trond, 2013). The purpose of this study is to contribute to the literature and dialogue around the link between corporate governance and firm performance.

2.2. Empirical Literature Review

Various studies on the link between corporate governance and firm performance have been conducted however there are inconsistent results reported (Sebone, 2014). Further analysis is therefore needed on the topic to fully understand the implications for owners, executives, investors and employees (Amoh & Mensah, 2023). In the South African context, a gap identified is that there is no study on the link between corporate governance and firm performance since the publishing of the King IV report in 2016.

As there are different conclusions reached on the same study, there must be moderating variables which are not known today. Several studies have been performed in various parts of the world however another gap in the research is that there has been no analysis of the link between corporate governance and firm performance in the various sectors of an economy.

This link does, however, seem to depend on cultural norms and the strength of the legal environment where it is being analysed (Klapper & Love, 2002).

2.3. Analytical Framework

2.3.1. Theoretical and conceptual Frameworks

Corporate Governance is founded on the agency theory (Bourg, 2015). Within the Agency theory, owners and managers of an organisation have different interests and priorities in order to advance their personal agendas (Kaunda & Pelser, 2023).

The objective of corporate governance is to reduce the impact of the agency theory and align the objectives and actions of owners, shareholders and executives of a firm (Bourg, 2015).

Modern topics on corporate governance surpass the traditional view of owner and manager views. Modern corporate governance is about aligning the actions of owners and managers to the needs of all stakeholders (i.e. Shareholder vs Stakeholder view) (Sebone, 2014)

Various previous studies have been performed on the topic however there are mixed results for example when comparing Munisi and Trond (2013) and their analysis in Sub Sahara where there was a positive relationship between corporate governance and firm performance against Ayodele et al., (2016) in their analysis of the Oil and gas industry in Nigeria which concluded that there is a negative relationship between corporate governance and firm performance.

Prior research on the topic concluded that:

There is a positive relationship between corporate governance and market valuation of a firm (Sebone, 2014) indicating that there is a positive sentiment about corporate governance. Based on a study by Bourg, (2015), there is a strong relationship between corporate governance and financial performance however it is not clear which is the dependent and independent variables. Companies with good corporate governance tend to have more consistent and sustainable ROE (Saebah et al., 2023). Low corporate governance is linked to low performance (Kaunda & Pelser, 2023). There is a positive relationship between independence of the board and financial performance (Ayodele et al., 2016). In contrast to most literature, Munisi and Trond, (2013) found there to be a negative relation between corporate governance and market valuation based on firms in sub–Saharan Africa. Klapper

and Love, (2002) concluded that higher levels of corporate governance are linked with better firm performance (accounting and market performance).

2.4. Conclusion

Based on the literature review conducted, the main gaps in researching the nexus between corporate governance and company performance is that no study has been performed in South Africa since the publishing of the King IV code and that no study has been performed to analyse the relationship between corporate governance and company performance in the various sectors of the South African economy.

Several studies have however been performed in the past and have focused on various individual countries. The results mainly show that there is a positive relationship between corporate governance and firm performance however there are a few studies that have concluded that there is no relationship or even that there is a negative relationship. Further academic work is therefore justified to mature the academic understanding around this topic.

2.5. Research Hypothesis

H1: There is a positive relationship between corporate governance and financial performance of JSE listed companies.

H2: The link between corporate governance and firm performance differs between sectors of the economy.

3. RESEARCH METHODOLOGY

3.1. Introduction

The research entails obtaining data about the relationship between corporate governance and firm performance of JSE listed firms. The study also distinguishes this relationship among the various sectors of the JSE which is seen as a gap in the literature reviewed thus far. A random sample (with variations in market capitalisation) of 5 companies (with published annual reports in the analysis period) from the following 10 sectors were selected: Basic Materials, Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Real Estate,

Technology and Telecoms. The research covers a period of five years from 2020 – 2024. Information on corporate governance and firm performance for these companies was analysed over the 5-year period to determine the kind of relationship that exists between corporate governance and firm performance and whether this is consistent over the various sectors of the JSE. This will expand on the view that there is a difference in the link between corporate governance and firm performance between financial and non-financial sector companies (Amoh & Mensah, 2023)

The research worldview is to confirm the hypothesis that firm performance is directly proportional to higher levels of corporate governance. There have been mixed results on this topic (Larker et al., 2007) and no equivalent research has been found for the period under review.

3.2. Research Design

The research design is longitudinal as corporate governance and company performance has been analysed over a 5-year period. A longitudinal design was chosen in order to evaluate the dynamic relationship between corporate governance and financial performance and to increase the amount of data used in the analysis (this increases the reliability of the study results by catering for lagging effects). Pearson correlation analysis was used to analyse the relationship between corporate governance and company performance. The advantages are that readily available data was used for the research so that more time could be spent on statistical analysis of the data and gathering of insights. The disadvantage of this research is that it depends on published information in annual reports which usually has some level of bias towards investors.

3.3. Data collection methods

a. Population

The population is all listed companies on the Johannesburg Stock Exchange.

b. Sample and sample method

The sample is 5 companies from each of the 10 sectors of the economy (50 companies) which were analysed over a 5-year period from 2020 to 2024. The selected companies per sector were chosen using simple random sampling but included a spread of companies based on market capitalisation to improve representation of the population.

The source of the data is integrated annual reports that are published by JSE listed companies and the IRESS financial database. The corporate governance index was populated for 2020 and 2024 after manually reviewing all 100 annual reports. Corporate governance indices for the intermediate years were calculated using linear interpolation while actual financial data for all years were obtained from IRESS.

3.4. Research Instrument, Data analysis strategies and interpretation

Only secondary data was used during the research. The data (governance variables and company performance) were extracted from published reports and financial databases. Correlation analysis was then performed using SPSS as the most relevant method of analysis (Ayodele et al., 2016). A governance index as described in the paper "*Towards better governance: creating a corporate governance index for South African firms*" by Naidu, McCullough and Peerbhai (2024) was used as a basis for quantifying compliance to corporate governance practices.

All tables and graphs in this report are the author's own work and is based on the abovementioned corporate governance index and financial metrics of 50 JSE listed companies. The corporate governance indices were computed by analysing information in annual reports. The financial metrics were obtained from information available to the public in annual reports and financial databases.

3.5. Limitation

The study is limited to the analysis of 50 companies on the JSE (5 per sector) over a 5-year period (2020 – 2024). Corporate governance variables are extensive but limited to the following:

Variables	Provisions	Scoring rule
Panel A: Board characteristics subindex (BCS)		
BC1	Board majority are independent non-executive directors (NEDs)	1 if yes; 0 otherwise
BC2	Minimum four board members	1 if yes; 0 otherwise
BC3	Chairman and chief executive officer (CEO) split	1 if yes; 0 otherwise
BC4	Chairman of an independent NED	1 if yes; 0 otherwise
BC5	Company secretary present	1 if yes; 0 otherwise
BC6	Board meets at least four times a year	1 if yes; 0 otherwise
BC7	Nomination committee exists	1 if yes; 0 otherwise
BC8	Nomination committee has mostly independent NEDs	1 if yes; 0 otherwise
BC9	Remuneration committee exists	1 if yes; 0 otherwise
BC10	Remuneration committee only has independent NEDs	1 if yes; 0 otherwise
BC11	Chairman of remuneration committee an independent NED	1 if yes; 0 otherwise
BC12	Record of meeting attendance is disclosed	1 if yes; 0 otherwise
Panel B: Accounting and auditing subindex (AAS)		
AA1	Audit committee exists	1 if yes; 0 otherwise
AA2	Audit committee has at least two independent NEDs	1 if yes; 0 otherwise
AA3	Chairman of committee is an independent NED, who is also not the main board chairman	1 if yes; 0 otherwise
AA4	Record of meeting attendance is disclosed	1 if yes; 0 otherwise
Panel C: Risk management subindex (RMS)		
RM1	Risk management committee exists	1 if yes; 0 otherwise
RM2	Company discloses actual and potential future non-systematic risks	1 if yes; 0 otherwise
RM3	Company discloses how current and future assessed risks will be managed	1 if yes; 0 otherwise
RM4	Company provides a narrative of existing internal control	1 if yes; 0 otherwise

Table 1: Elements comprising the corporate governance index and sub indices (Naidu et al., 2024)

The Corporate Governance Index (CGI) and subindices developed by (Naidu et al., 2024) was used to quantify adherence to corporate governance principles and ranges from 0 or 0% (no compliance) to 1 or 100% (full compliance). This paper was chosen as it was the latest corporate governance index developed for South African companies and the only index to have been subjected to a robustness test. The Company performance variables is limited to net profit, ROA, ROE, revenue growth, EBIT and share price.

3.6. Quality Assurance

a. External validity

As corporate governance is a cultural aspect and the link between corporate governance and company performance may be different in different countries (Klapper & Love, 2002) , the results of the study may be generalised within the South African context.

b. Internal validity

To achieve internal validity, only secondary data from reliable sources has been used (published annual reports and financial databases). The selected companies represent all sectors of the economy in order to be representative of firms in South Africa.

c. Reliability

All data used in this study (secondary data only) comes from published and reliable sources. Standard correlation analysis was performed using SPSS. Considering these aspects, the reliability of the results can be assured and will be similar to other studies involving the analysis of the same data.

3.7. Ethical considerations

All data has been extracted from reliable secondary sources. This report ensures confidentiality of the companies used in the research.

4. RESEARCH FINDINGS AND DISCUSSIONS

4.1. Research Findings

4.1.1. Corporate Governance Index (CGI) ratings of South African listed JSE firms

Before comparing corporate governance scores and financial metrics, the corporate governance scores for all companies in the study and per sector were analysed. The results for all companies is shown in Table 2 below

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CGI 2024	50	.600	1.000	.830	.103
CGI 2023	50	.613	.950	.819	.093
CGI 2022	50	.617	.967	.808	.092
CGI 2021	50	.583	.983	.797	.100
CGI 2020	50	.500	1.000	.785	.116
Valid N (listwise)	50				

Table 2: CGI Scores for all sectors on the JSE. Own work

The findings show that there is high (79 – 83%) compliance to corporate governance codes and a general improvement among JSE listed companies over the period analysed. The minimum score increased from 0.5 to 0.6 and the mean score increased from 0.785 to 0.83 (a 5.69% increase over the 5-year period). The standard deviation also reduced from 0.116 to 0.103 showing a reduction in variation of CGI scores. Similar results for each of the three subindices of the CGI are described in the following sections.

4.1.2. Board characteristics subindex (BCS) ratings of South African listed JSE firms

As shown in Table 3 below, the average BCS score shows high compliance (78 – 83%) to board requirements. The BCS also increased from 0.784 to 0.826 over the 5-year period showing an increase of 5.25%. The minimum score across all companies however decreased from 0.556 to 0.5 and there was a marginal decrease in variability.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
BCS 2024	50	.500	1.000	.826	.134
BCS 2023	50	.521	1.000	.815	.120
BCS 2022	50	.542	1.000	.805	.116
BCS 2021	50	.563	1.000	.795	.122
BCS 2020	50	.556	1.000	.784	.137
Valid N (listwise)	50				

Table 3: BCS Scores for all sectors on the JSE. Own work

4.1.3. Accounting and auditing subindex (AAS) ratings of South African listed JSE firms

As shown in Table 4 below, the AAS score on average is very high among South African firms at 97 – 98% compliance. The average AAS score increased from 0.965 to 0.975 over the 5-year period showing an increase of 1.04% (The lower % increase compared to other subindexes is attributed to the effects of saturation due to almost 100% compliance across all companies). The minimum score across all companies remained flat at 0.5 and variability decreased by 9.9%.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
AAS 2024	50	.500	1.000	.975	.091
AAS 2023	50	.563	1.000	.973	.080
AAS 2022	50	.625	1.000	.970	.078
AAS 2021	50	.625	1.000	.968	.086
AAS 2020	50	.500	1.000	.965	.101
Valid N (listwise)	50				

Table 4: AAS Scores for all sectors on the JSE. Own work

4.1.4. Risk management subindex (RMS) ratings of South African listed JSE firms

As shown in Table 5 below, the average RMS score for all companies analysed is between 61 and 69% and is the subindex with the lowest compliance rating. There is however a positive trend with the minimum increasing from 0.167 to 0.250, the mean increasing from 0.608 to 0.690 (a 13.43% increase over the 5-year period) and a 17% reduction in variability.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
RMS 2024	50	.250	1.000	.690	.199
RMS 2023	50	.250	1.000	.676	.178
RMS 2022	50	.250	1.000	.653	.169
RMS 2021	50	.250	1.000	.631	.193
RMS 2020	50	.167	1.000	.608	.241
Valid N (listwise)	50				

Table 5: RMS Scores for all sectors on the JSE. Own work

4.1.5. Descriptive Summary of CGI and Subindices (BSC, AAS and RMS) for all companies over the 5-year period

When analysing the overall corporate governance index and its subindices for all companies over the period, the results show an increase in compliance and a reduction in standard deviation across the board.

Index / Subindex	Mean	Change in Mean	Std Deviation	Change in Std Deviation
CGI 2024	0.83	5.73%	0.103	-10.43%
CGI 2020	0.785		0.115	
BCS 2024	0.826	5.36%	0.134	-2.19%
BCS 2020	0.784		0.137	
AAS 2024	0.975	1.04%	0.091	-9.90%
AAS 2020	0.965		0.101	
RMS 2024	0.69	13.49%	0.199	-17.43%
RMS 2020	0.608		0.241	

Table 6: Evolution of mean and standard deviation for CGI and its subindices for all sectors on the JSE. Own work

4.1.6. Analysis of individual elements in the CGI for all companies over the 5-year period

As displayed graphically in Figure 1, 100% compliance was achieved for 3 of the individual elements in 2024 (BC2 – minimum four board members, BC3 – Chair and CEO roles are split and AA1 – an audit committee exists (up from 98% in 2020).

The elements with the lowest compliance are BC10 – full independence of the remuneration committee, RM2, 3 and 4 (reporting of non-systematic risks, providing an overview of how risks will be managed and an overview of existing controls) and BC1 – majority of the board are independent non-executive directors.

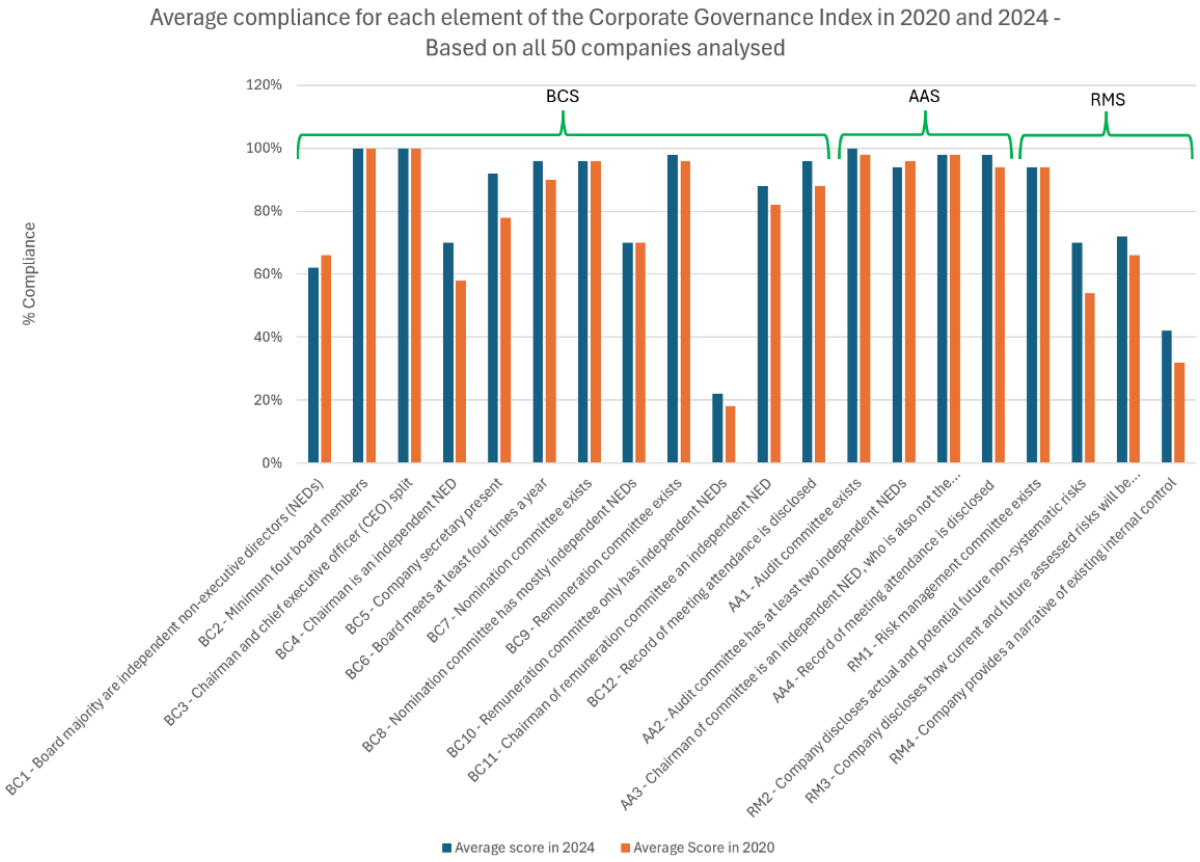

Figure 1: Percent compliance of each element in the CGI. Own work

4.1.7. Sectoral analysis of CGI scores

As shown in Table 7 below, the CGI increased in all sectors except Basic Materials and Real Estate.

Sector	Average CGI 2020	Average CGI 2024	% Change	Increasing / Decreasing
Basic Materials	0.91	0.86	-5.86%	Decreasing
Consumer Discretionary	0.77	0.81	5.63%	Increasing
Consumer Staples	0.75	0.82	9.33%	Increasing
Energy	0.78	0.86	10.26%	Increasing
Financials	0.79	0.88	11.39%	Increasing
Health Care	0.84	0.86	2.38%	Increasing
Industrials	0.73	0.79	8.22%	Increasing
Real Estate	0.79	0.78	-1.27%	Decreasing
Technology	0.71	0.79	10.75%	Increasing
Telecoms	0.78	0.85	8.97%	Increasing
All Sectors	0.79	0.83	5.69%	Increasing

Table 7: Sectoral analysis of the CGI from 2020 to 2024. Own work

Similar tables for BCS, AAS and RMS can be found in Appendix 1.

Table 8 below highlights the trend of CGI, BCS, AAS and RMS for the various sectors from 2020 to 2024. The decreasing trend in the Basic Materials and Real Estate sectors is noticeable and concerning.

Sector	CGI 2020 - 2024	BCS 2020 - 2024	AAS 2020 - 2024	RMS 2020 - 2024
Basic Materials	Decreasing	Decreasing	Flat	Decreasing
Consumer Discretionary	Increasing	Increasing	Flat	Decreasing
Consumer Staples	Increasing	Increasing	Flat	Increasing
Energy	Increasing	Increasing	Flat	Increasing
Financials	Increasing	Increasing	Flat	Increasing
Health Care	Increasing	Increasing	Increasing	Increasing
Industrials	Increasing	Increasing	Increasing	Increasing
Real Estate	Decreasing	Flat	Flat	Decreasing
Technology	Increasing	Increasing	Decreasing	Increasing
Telecoms	Increasing	Increasing	Increasing	Flat

Table 8: Trend analysis of various CGI, BCS, AAS and RMS from 2020 to 2024. Own work

4.1.8. Market Capitalisation vs CGI, BCS, AAS and RMS

A correlation analysis of market cap vs CGI was performed for all companies analysed during the research. The results show that there is no significant relationship between market cap and CGI scores as per Figure 2 and Table 9 below.

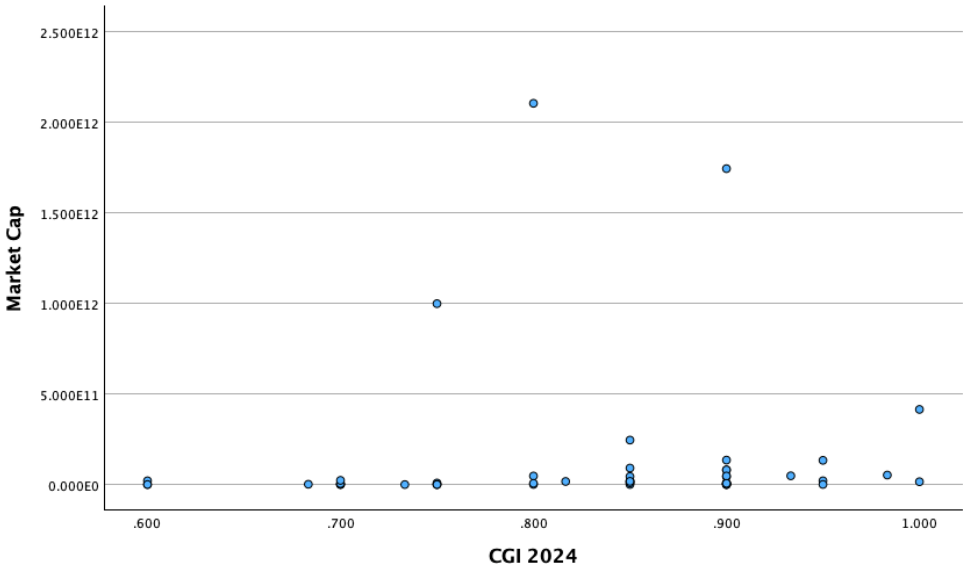

Figure 2: Graph of market cap vs CGI for all 50 companies. Own work

Correlations

Pearson Correlation

	1	2
1. Market Cap	-	
2. CGI 2024	.05	-

Table 9: Correlation coefficients between market cap and CGI. Own work

The correlation coefficients between market cap and BCS, AAS and RMS are shown in Appendix 2. The results show that there is no significant correlation between market cap and BCS, AAS or RMS.

4.1.9. Annual change in revenue vs CGI

An analysis was conducted to determine if there are any correlations between % annual change in revenue and CGI. As shown in Figure 3 and Table 10 below, there is no statistically significant relationship between % change in revenue and CGI.

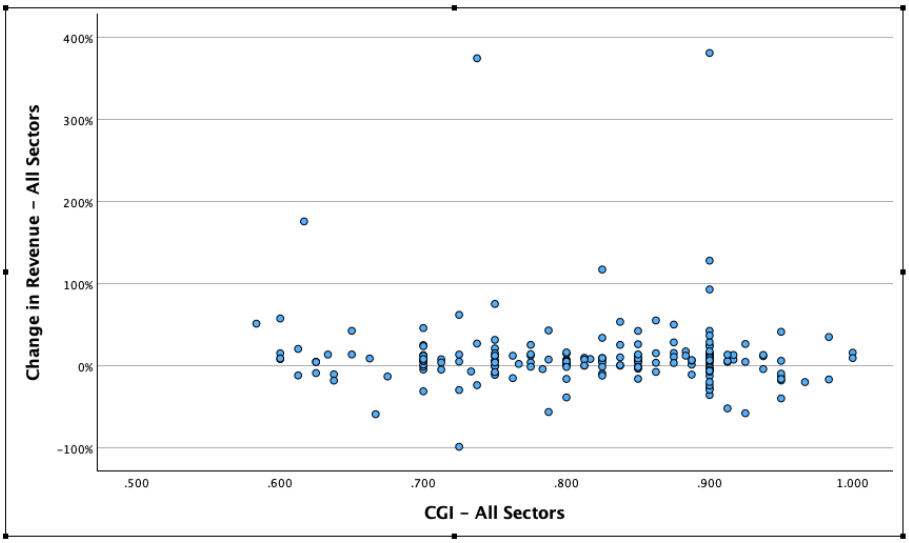

Figure 3: Graph of % change in revenue vs CGI for all 50 companies. Own work

Correlations

Pearson Correlation

	1	2
1. Change in Revenue – All Sectors	-	
2. CGI – All Sectors	-.04	-

Table 10: Correlation coefficients between % change in revenue and CGI. Own work

The correlation coefficients between % revenue change and BCS, AAS and RMS are shown in Appendix 3. The results show that there is no statistically significant relationship between % revenue change and BCS, AAS or RMS.

4.1.10. Annual change in EBIT vs CGI

An analysis was done to determine if there are any correlations between % annual change in EBIT and CGI. As shown in Figure 4 and Table 11, there is no statistically significant correlation between % change in EBIT and CGI.

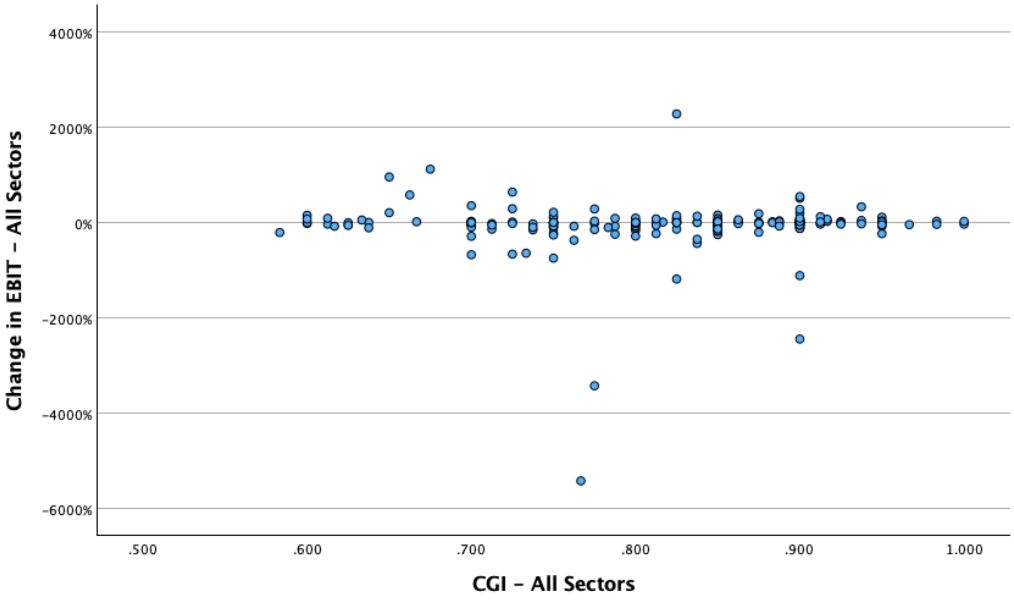

Figure 4: Graph of % change in EBIT vs CGI for all 50 companies. Own work

Correlations

Pearson Correlation

	1	2
1. Change in EBIT – All Sectors	-	
2. CGI – All Sectors	.00	-

Table 11: Correlation coefficients between % change in EBIT and CGI. Own work

The correlation coefficients between % change in EBIT and BCS, AAS and RMS is shown in Appendix 4. The results show that there is no statistically significant relationship between % change in EBIT and BCS, AAS or RMS.

4.1.11. Annual change in Net Profit vs CGI

An analysis was conducted to determine if there are any correlations between Net Profit and CGI for all companies studied. As shown in Figure 5 and Table 12 below, there is no statistically significant relationship between % change in Net Profit and CGI.

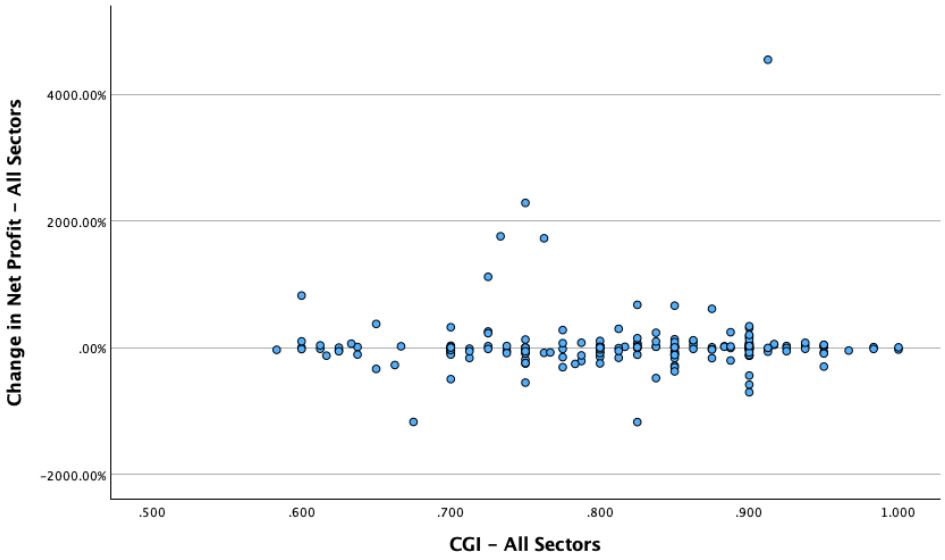

Figure 5: Graph of % change in Net Profit vs CGI for all 50 companies. Own work

Correlations

Pearson Correlation

	1	2
1. Change in Net Profit – All Sectors	-	
2. CGI – All Sectors	.01	-

Table 12: Correlation coefficients between % change in Net Profit and CGI. Own work

The correlation coefficients between % change in Net Profit and BCS, AAS and RMS is shown in Appendix 5. The results show that there is no statistically significant relationship between change in Net Profit and BCS, AAS or RMS.

4.1.12. CGI vs annual change in ROE

An analysis was conducted to determine if there is any relationship between CGI and ROE. As shown in Figure 6 and Table 13 below, the results show that there is no statistically significant relationship between CGI and ROE.

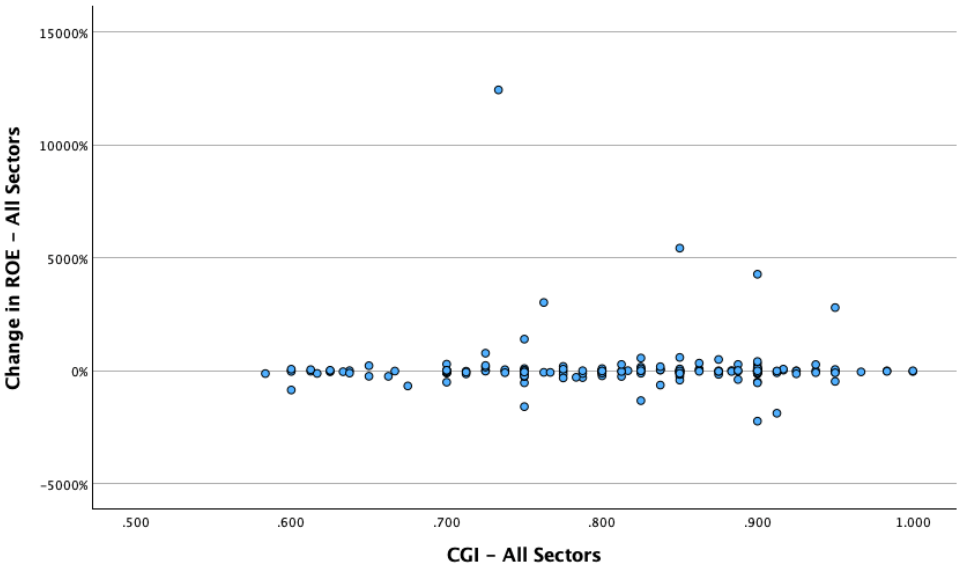

Figure 6: Graph of CGI vs % change in ROE for all 50 companies. Own work

Correlations

Pearson Correlation

	1	2
1. Change in ROE - All Sectors	-	
2. CGI - All Sectors	-.01	-

Table 13: Correlation coefficients between % change in ROE and CGI. Own work

The correlation coefficients between % change in ROE and BCS, AAS and RMS is shown in Appendix 6. The results show that there is no statistically significant relationship between change in ROE and BCS, AAS or RMS.

4.1.13. CGI vs annual change in ROA

An analysis was conducted to determine if there is any relationship between CGI and ROA. As shown in Figure 7 and Table 14, the results indicate that there is no statistically significant relationship between ROA and CGI.

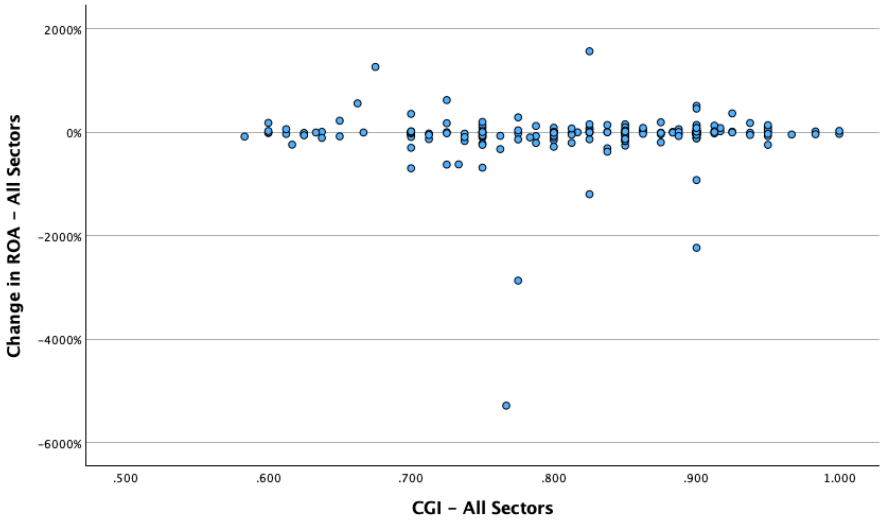

Figure 7: Graph of CGI vs % change in ROA for all 50 companies. Own work

Correlations

Pearson Correlation

	1	2
1. Change in ROA – All Sectors	-	
2. CGI – All Sectors	.02	-

Table 14: Correlation coefficients between % change in ROA and CGI. Own work

The correlation coefficients between % change in ROA and BCS, AAS and RMS is shown in Appendix 7. The results show that there is no statistically significant relationship between ROA and BCS, AAS or RMS.

4.1.14. CGI vs annual change in Share Price

An analysis was performed to determine if there is any relationship between CGI and the annual % change in share price. As shown in Figure 8 and Table 15, the results show that there is no statistically significant correlation between CGI and Share Price.

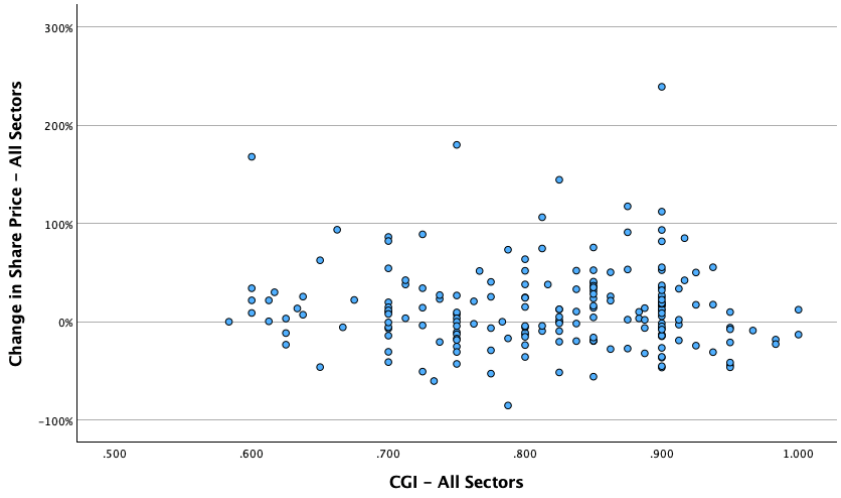

Figure 8: Graph of CGI vs % change in share price for all 50 companies. Own work

Correlations

Pearson Correlation

	1	2
1. Change in Share Price – All Sectors	-	
2. CGI – All Sectors	-.05	-

Table 15: Correlation coefficients between % change in Share Price and CGI. Own work

The correlation coefficients between % change in Share Price and BCS, AAS and RMS is shown in Appendix 8. The results show that there is no statistically significant relationship between BCS, AAS or RMS and % changes in Share Price.

4.1.15. Sectoral Analysis of Financial metrics vs CGI and subindices

An analysis of the correlation between the various financial metrics, CGI and its subindices was performed per sector. The results are tabulated below and the details provided in Appendix 9 to 19.

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No.	Sector of the JSE	Statistically significant relationship exists between corporate governance and financial metrics
1	Basic Materials	No
2	Consumer Discretionary	No
3	Consumer Staples	No
4	Energy	No
5	Financials	Yes
6	Health Care	No
7	Industrials	Yes
8	Real Estate	No
9	Technology	No
10	Telecommunications	No

Table 16: Summary of sectoral analysis of CGI vs finanical metrics. Own work

The results show that there is no statistically significant relationship between corporate governance and firm performance for 8 of the 10 sectors analysed. Further detail is provided below on the financial and industrials sectors where at least one significant correlation was detected.

4.1.15.1. *Financial metrics vs CGI and subindices in the Financials sector*

As confirmed by Table 17, there is a statistically significant relationship between CGI and EBIT as well as CGI and ROA in the financials sector of the JSE. Both correlations are driven primarily by the BCS subindex.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue – Financials	–									
2. Change in EBIT – Financials	.32	–								
3. Change in Net Profit – Financials	.02	-.29	–							
4. Change in ROE – Financials	.07	-.30	.99**	–						
5. Change in ROA – Financials	.32	1.00**	-.28	-.29	–					
6. Change in Share Price – Financials	.52*	-.12	.20	.18	-.13	–				
7. CGI – Financials	.10	.48*	-.20	-.21	.50*	.04	–			
8. BCS – Financials	.28	.44*	-.06	-.07	.46*	.18	.94**	–		
9. AAS – Financials	.b	.b	.b	.b	.b	.b	.b	.b	_b	
10. RMS – Financials	-.42	.25	-.42	-.44	.25	-.36	.45*	.12	.b	–

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

b. Cannot be computed because at least one of the variables is constant.

Table 17: Correlation between CGI and financial metrics in the financials sector of the JSE. Own work

4.1.15.2. *Financial metrics vs CGI and subindices in the Industrials sector*

As confirmed by Table 18, there is a statistically significant relationship between CGI and ROE in the Industrials sector of the JSE. The correlation is driven primarily by the AAS subindex.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue – Industrials	–									
2. Change in EBIT – Industrials	.04	–								
3. Change in Net Profit – Industrials	.24	.44	–							
4. Change in ROE – Industrials	.13	.33	.34	–						
5. Change in ROA – Industrials	.12	.99**	.48*	.36	–					
6. Change in Share Price – Industrials	.22	.37	.35	.29	.38	–				
7. CGI – Industrials	-.03	.01	.03	.58**	.00	-.02	–			
8. BCS – Industrials	.07	.02	.19	.31	.01	-.11	.83**	–		
9. AAS – Industrials	-.11	.19	-.17	.57*	.19	.19	.43	-.06	–	
10. RMS – Industrials	-.18	-.18	-.26	.38	-.18	.07	.34	-.19	.56*	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 18: Correlation between CGI and financial metrics in the Industrials sector of the JSE. Own work

4.2. Discussion on Findings

4.2.1. Corporate Governance scoring among JSE listed firms – All Sectors

The results of the study show that JSE listed firms generally score well according to the corporate governance index and that there are still concerted efforts to increase compliance. This is concluded by observing that the average CGI score in 2020 was 0.79 which increased to 0.83 in 2024.

General improvements in corporate governance can also be concluded by analysing the minimum scores of all companies which increased from 0.5 in 2020 to 0.6 in 2024.

4.2.1.1. Board Characteristics Subindex scoring

The BCS counts 12 points out of a total of 20 in the CGI and is therefore the highest contributor to overall CGI. The results of the study shows that compliance to the BCS index is high and that there is a continuous increase in the scoring. This is confirmed by observing the average BCS increasing from 0.78 in 2020 to 0.83 in 2024.

The minimum BCS scores however decreased from 0.55 to 0.5 over the period analysed indicating that there is some regression especially on the lower compliance spectrum.

During the study, it was noted that BCS contained some difficult aspects to comply with especially for companies where the founder is in an executive position or where the firm is a family-owned company. Independence as per the corporate governance codes was found to be difficult to achieve in such instances.

4.2.1.2. Accounting and Auditing Subindex scoring

Firms scored the highest on AAS from all three subindices. This can be attributed to many of the provisions in the index being mandatory as per the Companies Act and JSE listing requirements. Even while very high, there is still a positive trend in compliance. This is concluded by observing that the average AAS increased from 0.97 in 2020 to 0.98 in 2024.

4.2.1.3. Risk Management Subindex scoring

RMS is the index with the lowest average compliance among the three subindices. While there is a positive trend where the average score increased from 0.61 in 2020 to 0.69 in 2024, the RMS is the area with the most opportunity for significantly increasing overall CGI compliance due to the current low scoring.

During the study, it was evident that many companies did not disclose non-systematic risks nor provide details on current and future action plans for risk mitigation. Most companies referenced systematic macro -economic risks which is not aligned with the intent of the RMS.

4.2.2. Analysis of individual elements in the CGI

As shown in Figure 1 and already concluded in 4.2.1, adoption of corporate governance principles is generally high among JSE listed companies. There are however a few elements where compliance remains concerningly low.

4.2.2.1. Independence of the Remuneration Committee

Element BC10 of the CGI and BCS requires that all members of the remuneration committee be independent non-executive directors. In 2024, only 22% of companies analysed were compliant with this requirement. As per principle 14 of King IV, low compliance to this element can lead to conflicts of interest and jeopardise fair, responsible and transparent remuneration (Institute of Directors in Southern Africa, 2016).

Lack of independence of directors managing the remuneration committee also risk agency problems and lack of alignment between executive remuneration and shareholder interests (Kanapathippillai et al., 2016).

4.2.2.2. Disclosure of non-systematic risks and mitigating actions

All companies scored relatively low on elements RM2, 3 and 4 which are related to the disclosure of non-systematic risks, how current and future risks are assessed and whether existing controls are in place to manage these risks. This is consistent with the results of a study by Enslin et al., (2023) where it was concluded that risk management disclosures among South African companies are unreadable, lack improvement and are biased.

As per principle 11 of King IV, such low scores threaten the ability of the organisation to manage risk and maximise probability of achieving strategic objectives. Publication of low compliance in this regard will lower investor confidence, affect organisational value and raise concerns by industry regulatory bodies (Institute of Directors in Southern Africa, 2016).

4.2.2.3. Independence of the chair and non-executive directors

Other elements with low scores that needs attention are BC1: Board majority are independent non-executive directors (62% in 2024) and BC4: Chair is an independent NED (70% in 2024).

While these scores might not seem as low as other elements mentioned, the independence of the board and that of the chair is considered a core governance criterion according to King IV and is crucial for avoiding fundamental conflicts of interest, biased decisions and to protect stakeholder interests (Institute of Directors in Southern Africa, 2016).

While there is no excuse for non-adherence to achieving a majority board independence, during the study, it was noted that non-compliance to independence of the chair occurs where the chair was a founder of the company or where the company in review is a family-owned company. As reported by Palmberg (2015) and Álvaro et al., (2020), there are significant benefits for board independence including better financial performance however similar instances of non-compliance in family-owned companies was also detected in these studies in Sweden and Spain.

4.2.3. Corporate Governance scoring among JSE listed firms – Sectoral Analysis

As depicted in Table 8, CGI and BCS scores have increased in the period under review for all except 2 sectors (Basic Materials and Real Estate). Zulu, (2018) attributes this in the mining sector to a lack of adoption and adherence to the integrated reporting framework as a result of conflicts between areas of focus in the King IV report and other industry specific guidelines such as the mining charter. This may also be due to poor government and industry regulation, historic corruption and a focus on environmental and social factors at the expense of governance (Ross et al., 2025).

AAS was flat or increasing in all sectors except Technology where the rating (while high) decreased from 0.95 to 0.9. This may be attributed by companies in these sectors being dominated by technical experts as opposed to accountants which is the case in the vast

majority of companies reviewed. Majority of the sectors analysed had AAS scores which were flat either due to full compliance or very high scores indicating the effects of saturation in this subindex.

RMS scores increased in most sectors, was flat in telecoms and decreased in Basic Materials, Consumer Discretionary and Real Estate.

4.2.4. The relationship between market capitalisation and corporate governance

As shown in Figure 2 and Table 9, there is no statistically significant relationship between market capitalisation and corporate governance. This dispels the causation theory that larger companies with more resources are more likely to have high compliance to corporate governance. The results confirm that all companies irrespective of size can achieve high levels of corporate governance if this is the will of the governing body and executive management.

4.2.5. The relationship between corporate governance and firm financial performance

4.2.5.1. Analysis of all sectors

As concluded in the findings presented in sections 4.1.9 to 4.1.14, when analysing the average corporate governance scores and financial metrics of all companies in the study, it is concluded that there is no statistically significant correlation between corporate governance (or any of the subindices) and financial performance.

The research hypothesis H1 (That there is a positive relationship between corporate governance and financial performance of JSE listed companies) is therefore concluded as false.

4.2.5.2. Sectoral Analysis

As depicted in Table 16, there is no statistically significant relationship between corporate governance and financial performance for 8 of the 10 sectors. A significant finding of the study however is that there is a strong positive correlation between corporate governance and financial performance in the financials and industrials sectors of the economy.

In the financials, there are strong positive correlations between CGI and BCS and financial metrics EBIT and ROA. In the industrials sector, there is a very strong positive correlation between CGI and ROE and a strong correlation between AAS and ROE.

The research hypothesis H2 (The link between corporate governance and firm performance differs between sectors of the economy) is therefore proven as true.

While a dedicated study is warranted to determine why significant correlations between corporate governance and firm performance were detected in only the financials and industrials sectors, a previous study into the implementation of corporate governance in the banking sector shows that since the finance sector plays a pivotal role in capital allocations and management of risk with substantial consequences, that regulators pay specific attention to corporate governance in this sector. As external investors use corporate governance rankings to evaluate risk, financial institutions with higher corporate governance ratings are likely to have higher investor confidence, lower risk and therefore lower operational costs which directly impact financial performance (Pradhan et al., 2018).

Abu Khalaf and Al-Tarawneh (2019) found a similar reasoning behind the correlation in the industrials sector which includes capital intensive activities such as industrial manufacturing. In such organisations, the management of working capital and large debt is crucial to financial performance. Investors and industry bodies pay closer attention to firms managing large capital and corporate governance is used as a proxy to ensure responsible business management.

It can therefore be concluded that corporate governance is closely associated with firm performance mainly in sectors which are either involved in the lending or borrowing of significant capital as a significant source of risk.

5. CONCLUSIONS, RECOMMENDATIONS AND FUTURE RESEARCH

5.1. Summary of Findings

JSE listed firms generally have high adherence to corporate governance codes with an average CGI of 0.83 in 2024. There is also a concerted effort to embrace and improve on adoption of corporate governance practices as seen in a 5.69% increase in average CGI scores over the 5-year period analysed.

BCS and AAS scores are high considering the average of 0.83 for BCS and 0.98 for AAS in 2024. Saturation has set in specifically for AAS with many firms achieving 100% compliance. RMS remains an area of improvement with an average score of 0.69 in 2024.

Most sectors show an improvement in corporate governance scores and the related subindices however the Basic Materials and Real Estate sectors indicate a decreasing trend.

There is no statistically significant correlation between market capitalization and corporate governance scores.

When analysing all 50 companies together (representing all sectors), there is no statistically significant correlation between corporate governance (or any of the subindices) and financial performance however when a sectoral analysis was performed, strong positive correlations between corporate governance and some financial metrics exist in the financials and industrials sectors.

5.2. Conclusion

The results of the study show that there is a high and increasing trend in the adoption of corporate governance in all sectors except basic materials and real estate. Saturation has set in on the AAS subindex leading to limited room for improvement in best practices in accounting and auditing. BCS compliance is generally high, however many companies choose not to comply with certain practices especially in family-owned companies and companies where the founder is the chairman or chief executive. Increasing risk management practices and transparency on non -systematic risks is the biggest opportunity for increasing the overall corporate governance scores.

There is no statistically significant correlation between market capitalisation and corporate governance which dispels the theory that corporate governance follows growth and availability of resources. Good corporate governance can be achieved by companies of any size and is more dependent on the will of the board and executives.

When analysing all companies in the study, there is no statistically significant relationship between corporate governance and financial performance however a sectoral analysis

confirms that a positive correlation does exist especially in sectors involved with the management of large sums of capital. Companies can therefore increase probability of financial performance by increasing adoption of corporate governance codes.

5.3. Recommendations

As JSE listed companies are achieving high levels of compliance to the CGI, a new CGI should be developed to ensure continuous improvement and focus on corporate governance. This is especially important for the AAS sub index where saturation has set in due to very high compliance.

Only 22% of companies analysed were compliant with BC10 which requires that all members of the remuneration committee be independent non-executive directors. This clearly shows that there is a systematic issue of ensuring fair, responsible and transparent remuneration of executives and directors of JSE listed companies. Creating awareness of this issue and ensuring higher levels of compliance is needed.

Of the three subindices, Risk Management (RMS) was identified as the area with the lowest levels of compliance and thus the greatest opportunity for improvement. Directors, executives and industry bodies should increase the focus on disclosure of non-systematic risks and current and future mitigation plans as a key lever to increasing overall corporate governance scores of JSE listed companies.

Government, organisations such as the JSE and other industry bodies should investigate the negative trend in corporate governance observed in the basic materials and real estate sectors as such is unsustainable and will lead to undesirable practices such as fraud, corruption and risks to investors.

Evidence of a positive correlation between corporate governance and financial performance has been proven in the study specifically in sectors that are highly capital intensive. Firms should therefore view adherence to corporate governance not only for managing external stakeholders and their perceptions, but to maximise their own probability of business success.

5.4. Future Research

A more comprehensive corporate governance index should be developed which will reduce the current levels of compliance and create room for continuous improvement. This is particularly needed in the AAS subindex.

The negative trends in corporate governance compliance in the Basic Materials and Real Estate sectors are concerning and a dedicated study should be performed to determine the reasons and to develop mitigating actions.

A specific study is recommended to further understand why a positive relationship between corporate governance and firm performance exists in the financials and industrials sectors only.

Future research over a longer period or by introducing moderating variables to cater for specific economic events (e.g. COVID and the Avian flu) and to consider potential impacts of survivorship bias is recommended.

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APPENDIX 1: SECTORAL ANALYSIS OF THE EVOLUTION OF BCS, AAS AND RMS

Sector	Average BCS 2020	Average BCS 2024	% Change	Increasing / Decreasing
Basic Materials	0.92	0.84	-7.88%	Decreasing
Consumer Discretionary	0.73	0.83	13.64%	Increasing
Consumer Staples	0.72	0.80	11.63%	Increasing
Energy	0.80	0.84	5.56%	Increasing
Financials	0.82	0.85	4.08%	Increasing
Health Care	0.88	0.88	0.00%	Increasing
Industrials	0.72	0.77	6.98%	Increasing
Real Estate	0.80	0.80	0.00%	Flat
Technology	0.71	0.78	10.16%	Increasing
Telecoms	0.75	0.85	13.33%	Increasing
All Sectors	0.78	0.83	5.24%	Increasing

Sector	Average AAS 2020	Average AAS 2024	% Change	Increasing / Decreasing
Basic Materials	1.00	1.00	0.00%	Flat
Consumer Discretionary	1.00	1.00	0.00%	Flat
Consumer Staples	1.00	1.00	0.00%	Flat
Energy	0.95	0.95	0.00%	Flat
Financials	1.00	1.00	0.00%	Flat
Health Care	0.95	1.00	5.26%	Increasing
Industrials	0.90	0.95	5.56%	Increasing
Real Estate	0.95	0.95	0.00%	Flat
Technology	0.95	0.90	-5.26%	Decreasing
Telecoms	0.95	1.00	5.26%	Increasing
All Sectors	0.97	0.98	1.04%	Increasing

Sector	Average RMS 2020	Average RMS 2024	% Change	Increasing / Decreasing
Basic Materials	0.80	0.75	-6.25%	Decreasing
Consumer Discretionary	0.65	0.57	-12.82%	Decreasing
Consumer Staples	0.60	0.70	16.67%	Increasing
Energy	0.55	0.73	33.33%	Increasing
Financials	0.50	0.85	70.00%	Increasing
Health Care	0.60	0.65	8.33%	Increasing
Industrials	0.60	0.70	16.67%	Increasing
Real Estate	0.60	0.55	-8.33%	Decreasing
Technology	0.48	0.70	44.83%	Increasing
Telecoms	0.70	0.70	0.00%	Flat
All Sectors	0.61	0.69	13.42%	Increasing

APPENDIX 2: CORRELATION ANALYSIS OF MARKET CAP VS CGI, BCS, AAS AND RMS

Correlations

Pearson Correlation

	1	2	3	4	5
1. Market Cap	–				
2. CGI 2024	.05	–			
3. BCS 2024	.13	.90**	–		
4. AAS 2024	.09	.45**	.36*	–	
5. RMS 2024	-.15	.50**	.11	-.04	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 3: CORRELATION ANALYSIS OF % REVENUE CHANGE VS CGI, BCS, AAS AND RMS

Correlations

Pearson Correlation

	1	2	3	4	5
1. Change in Revenue – All Sectors	–				
2. CGI – All Sectors	-.04	–			
3. BCS – All Sectors	.00	.90**	–		
4. AAS – All Sectors	-.10	.44**	.26**	–	
5. RMS – All Sectors	-.06	.60**	.24**	.16*	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 4: CORRELATION ANALYSIS OF % CHANGE IN EBIT VS CGI, BCS, AAS AND RMS

Correlations

Pearson Correlation

	1	2	3	4	5
1. Change in EBIT – All Sectors	–				
2. CGI – All Sectors	.00	–			
3. BCS – All Sectors	.06	.90**	–		
4. AAS – All Sectors	.00	.44**	.26**	–	
5. RMS – All Sectors	-.10	.60**	.24**	.16*	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 5: CORRELATION ANALYSIS OF % CHANGE IN NET PROFIT VS CGI, BCS, AAS AND RMS

Correlations

Pearson Correlation

	1	2	3	4	5
1. Change in Net Profit – All Sectors	–				
2. CGI – All Sectors	.01	–			
3. BCS – All Sectors	.07	.90**	–		
4. AAS – All Sectors	.00	.44**	.26**	–	
5. RMS – All Sectors	-.11	.60**	.24**	.16*	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 6: CORRELATION ANALYSIS OF % CHANGE IN ROE VS CGI, BCS, AAS AND RMS

Correlations

Pearson Correlation

	1	2	3	4	5
1. Change in ROE – All Sectors	–				
2. CGI – All Sectors	-.01	–			
3. BCS – All Sectors	.01	.90**	–		
4. AAS – All Sectors	.05	.44**	.26**	–	
5. RMS – All Sectors	-.07	.60**	.24**	.16*	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 7: CORRELATION ANALYSIS OF % CHANGE IN ROA VS CGI, BCS, AAS AND RMS

Correlations

Pearson Correlation

	1	2	3	4	5
1. Change in ROA – All Sectors	–				
2. CGI – All Sectors	.02	–			
3. BCS – All Sectors	.07	.90**	–		
4. AAS – All Sectors	.02	.44**	.26**	–	
5. RMS – All Sectors	-.09	.60**	.24**	.16*	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 8: CORRELATION ANALYSIS OF % CHANGE IN SHARE PRICE VS CGI, BCS, AAS AND RMS

Correlations

Pearson Correlation

	1	2	3	4	5
1. Change in Share Price – All Sectors	–				
2. CGI – All Sectors	-.05	–			
3. BCS – All Sectors	-.04	.90**	–		
4. AAS – All Sectors	-.07	.44**	.26**	–	
5. RMS – All Sectors	-.02	.60**	.24**	.16*	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 9: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE BASIC MATERIALS SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue – Basic Materials	–									
2. Change in EBIT – Basic Materials	-.19	–								
3. Change in Net Profit – Basic Materials	.13	.82**	–							
4. Change in ROE – Basic Materials	.20	.70**	.97**	–						
5. Change in ROA – Basic Materials	-.17	1.00**	.84**	.73**	–					
6. Change in Share Price – Basic Materials	.48*	.24	.30	.30	.26	–				
7. CGI –Basic Materials	.03	-.03	.08	.09	-.03	-.04	–			
8. BCS – Basic Materials	.24	.25	.44	.44	.27	.18	.62**	–		
9. AAS – Basic Materials	.[b]	.[b]	.[b]	.[b]	.[b]	.[b]	.[b]	.[b]	_[b]	
10. RMS – Basic Materials	-.16	-.24	-.25	-.24	-.26	-.19	.78**	-.01	.[b]	–

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

b. Cannot be computed because at least one of the variables is constant.

APPENDIX 10: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE CONSUMER DISCRETIONARY SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue Consumer Discretionary	–									
2. Change in EBIT Consumer Discretionary	-.04	–								
3. Change in Net Profit Consumer Discretionary	-.14	-.68**	–							
4. Change in ROE Consumer Discretionary	.29	.09	.27	–						
5. Change in ROA Consumer Discretionary	-.06	1.00**	-.68**	.08	–					
6. Change in Share Price Consumer Discretionary	.35	.53*	-.43	.10	.50*	–				
7. CGI Consumer Discretionary	.22	-.01	-.04	-.19	-.01	.00	–			
8. BCS Consumer Discretionary	.21	.05	-.10	-.18	.04	.09	.96**	–		
9. AAS Consumer Discretionary	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	_[a]	
10. RMS Consumer Discretionary	.17	-.16	.14	-.15	-.14	-.24	.66**	.44	.[a]	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

a. Cannot be computed because at least one of the variables is constant.

APPENDIX 11: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE CONSUMER STAPLES SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue Consumer Staples	-									
2. Change in EBIT Consumer Staples	.52*	-								
3. Change in Net Profit Consumer Staples	.47*	.94**	-							
4. Change in ROE Consumer Staples	.06	.01	-.26	-						
5. Change in ROA Consumer Staples	.51*	1.00**	.94**	.02	-					
6. Change in Share Price Consumer Staples	-.37	-.66**	-.40	-.39	-.64**	-				
7. CGI Consumer Staples	-.38	.06	-.08	.29	.06	-.27	-			
8. BCS Consumer Staples	-.26	.26	.16	.21	.26	-.27	.91**	-		
9. AAS Consumer Staples	.b	.b	.b	.b	.b	.b	.b	.b	_b	
10. RMS Consumer ...	-.19	-.49*	-.57**	.12	-.51*	.07	-.05	-.46*	.b	-

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

b. Cannot be computed because at least one of the variables is constant.

APPENDIX 12: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE ENERGY SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue - Energy	-									
2. Change in EBIT - ...	.15	-								
3. Change in Net Profit - Energy	-.09	-.05	-							
4. Change in ROE - ...	-.15	-.07	.96**	-						
5. Change in ROA - ...	.14	.98**	-.01	-.05	-					
6. Change in Share Price - Energy	-.02	-.13	-.16	-.24	-.10	-				
7. CGI - Energy	-.10	.13	-.05	-.18	.20	.11	-			
8. BCS - Energy	.01	.22	.08	-.09	.29	.16	.95**	-		
9. AAS - Energy	-.18	-.18	.25	.13	-.08	.10	.80**	.75**	-	
10. RMS - Energy	-.17	.08	-.35	-.42	.13	.07	.89**	.73**	.61**	-

**. Correlation is significant at the 0.01 level (2-tailed).

APPENDIX 13: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE FINANCIALS SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue – Financials	–									
2. Change in EBIT – Financials	.32	–								
3. Change in Net Profit – Financials	.02	-.29	–							
4. Change in ROE – Financials	.07	-.30	.99**	–						
5. Change in ROA – Financials	.32	1.00**	-.28	-.29	–					
6. Change in Share Price – Financials	.52*	-.12	.20	.18	-.13	–				
7. CGI – Financials	.10	.48*	-.20	-.21	.50*	.04	–			
8. BCS – Financials	.28	.44*	-.06	-.07	.46*	.18	.94**	–		
9. AAS – Financials	.[b]	.[b]	.[b]	.[b]	.[b]	.[b]	.[b]	.[b]	–[b]	
10. RMS – Financials	-.42	.25	-.42	-.44	.25	-.36	.45*	.12	.[b]	–

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

b. Cannot be computed because at least one of the variables is constant.

APPENDIX 14: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE HEALTH CARE SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue – Health Care	–									
2. Change in EBIT – Health Care	.15	–								
3. Change in Net Profit – Health Care	.11	.33	–							
4. Change in ROE – Health Care	-.08	-.07	-.57**	–						
5. Change in ROA – Health Care	-.55*	.45*	.23	.09	–					
6. Change in Share Price – Health Care	.13	-.25	.33	-.44	-.05	–				
7. CGI – Health Care	-.39	.21	.16	.13	.35	.09	–			
8. BCS – Health Care	-.26	.21	.10	.12	.29	.19	.94**	–		
9. AAS – Health Care	-.20	-.04	.07	.00	.03	-.07	.27	.04	–	
10. RMS – Health Care	-.45*	.07	.21	.04	.27	-.31	.24	-.07	.43	–

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

APPENDIX 15: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE INDUSTRIALS SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue – Industrials	–									
2. Change in EBIT – Industrials	.04	–								
3. Change in Net Profit – Industrials	.24	.44	–							
4. Change in ROE – Industrials	.13	.33	.34	–						
5. Change in ROA – Industrials	.12	.99**	.48*	.36	–					
6. Change in Share Price – Industrials	.22	.37	.35	.29	.38	–				
7. CGI – Industrials	-.03	.01	.03	.58**	.00	-.02	–			
8. BCS – Industrials	.07	.02	.19	.31	.01	-.11	.83**	–		
9. AAS – Industrials	-.11	.19	-.17	.57*	.19	.19	.43	-.06	–	
10. RMS – Industrials	-.18	-.18	-.26	.38	-.18	.07	.34	-.19	.56*	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 16: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE REAL ESTATE SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue – Real Estate	–									
2. Change in EBIT – Real Estate	-.21	–								
3. Change in Net Profit – Real Estate	.09	-.20	–							
4. Change in ROE – Real Estate	.18	-.37	-.44	–						
5. Change in ROA – Real Estate	-.23	1.00**	-.24	-.36	–					
6. Change in Share Price – Real Estate	.03	.08	-.24	.12	.10	–				
7. CGI – Real Estate	-.28	-.31	.03	.17	-.31	-.15	–			
8. BCS – Real Estate	-.25	-.35	.11	.14	-.34	-.11	.97**	–		
9. AAS – Real Estate	-.37	.15	.03	-.22	.15	.02	-.03	.00	–	
10. RMS – Real Estate	-.07	-.19	-.15	.27	-.18	-.19	.71**	.54*	-.51*	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 17: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE TECHNOLOGY SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue – Technology	–									
2. Change in EBIT – Technology	.20	–								
3. Change in Net Profit – Technology	.46*	.36	–							
4. Change in ROE – Technology	-.08	-.01	.33	–						
5. Change in ROA – Technology	.20	1.00**	.39	.01	–					
6. Change in Share Price – Technology	.54*	-.28	.29	-.05	-.28	–				
7. CGI – Technology	-.02	.09	.15	.25	.12	-.25	–			
8. BCS – Technology	-.02	.09	-.04	.09	.11	-.29	.94**	–		
9. AAS – Technology	-.28	.09	.12	.14	.11	-.38	.71**	.57*	–	
10. RMS – Technology	.25	.01	.45	.49*	.05	.13	.66**	.50*	.16	–

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

APPENDIX 18: CORRELATION ANALYSIS OF FINANCIAL METRICS, CGI AND SUBINDICES FOR THE TELECOMS SECTOR OF THE JSE.

Correlations

Pearson Correlation

	1	2	3	4	5	6	7	8	9	10
1. Change in Revenue – Telecoms	–									
2. Change in EBIT – Telecoms	-.37	–								
3. Change in Net Profit – Telecoms	-.34	.93**	–							
4. Change in ROE – Telecoms	-.28	.85**	.92**	–						
5. Change in ROA – Telecoms	-.29	.85**	.73**	.82**	–					
6. Change in Share Price – Telecoms	-.15	.00	.04	.27	.31	–				
7. CGI – Telecoms	-.26	-.16	-.23	-.12	.02	.12	–			
8. BCS – Telecoms	-.20	-.29	-.31	-.26	-.21	.06	.85**	–		
9. AAS – Telecoms	.04	-.02	.05	.03	-.13	-.02	.50*	.60**	–	
10. RMS – Telecoms	-.24	.09	-.04	.11	.34	.15	.62**	.14	-.10	–

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).